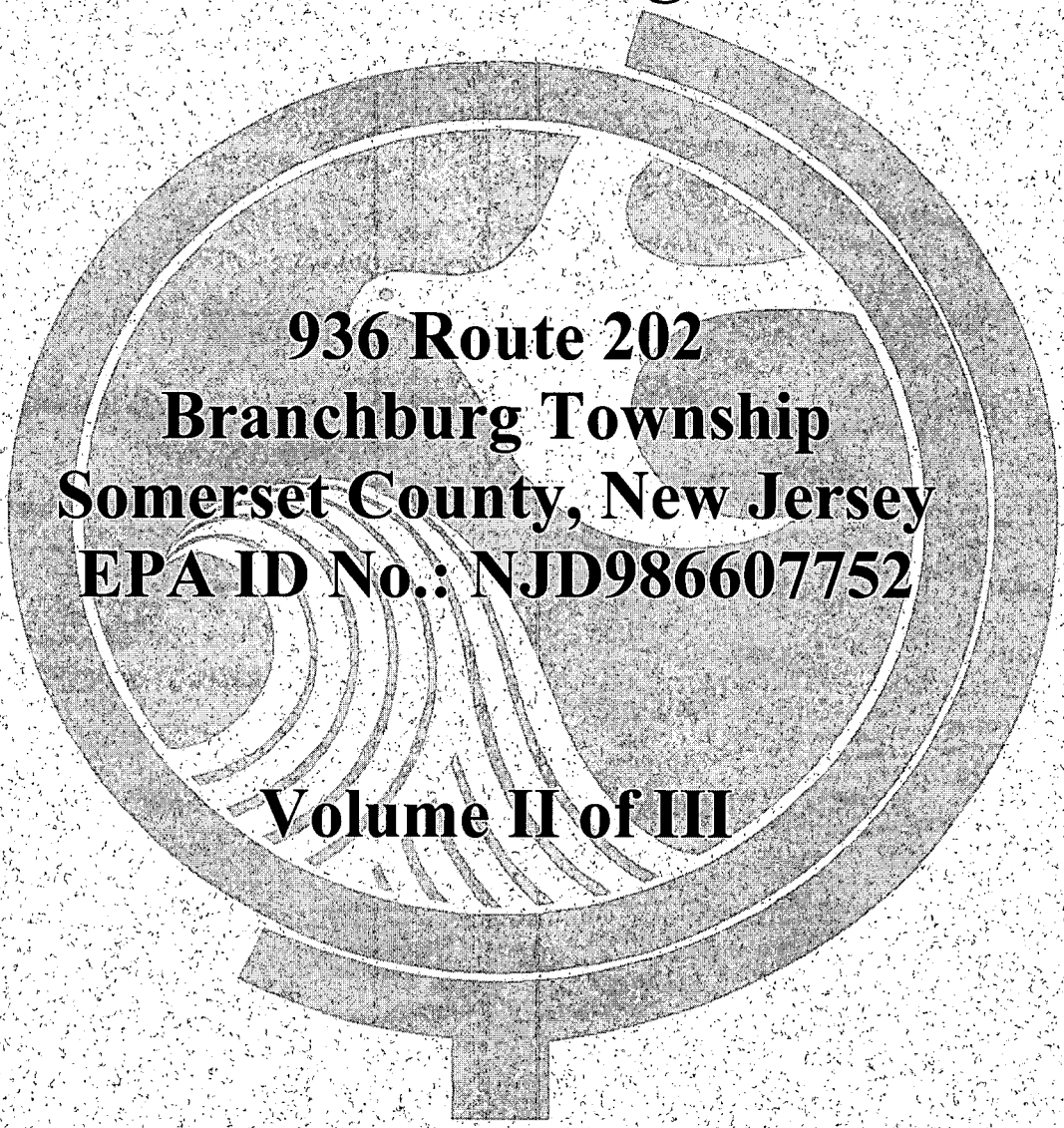
SITE INVESTIGATION

Exxon Service Station #3-2558
AKA Branchburg Exxon



936 Route 202
Branchburg Township
Somerset County, New Jersey
EPA ID No.: NJD986607752

Volume II of III

New Jersey Department of Environmental Protection
Site Remediation and Waste Management Program
Division of Remediation Support
Bureau of Environmental Measurements and Site Assessment

September 2005

ATTACHMENT HH

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

May 8, 2000

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Z 456 934 140
Exxon Company, USA
PO Box 730
1900 E. Linden Ave.
Linden, NJ 07036
ATTN: Jerri L. Hanks

Dear Ms. Hanks:

RE: EXXON S/S 3-2558 SITE, 936 ROUTE 202, BLOCK 42 LOT 8, BRANCHBURG TWP., SOMERSET COUNTY, NJDEP CASE # 99-02-04-1605-43

The NJDEP/Division of Responsible Party Site Remediation/Bureau of Fund Management, Compliance and Recovery acknowledges receipt of a letter dated April 20, 2000 from Groundwater & Environmental Services, Inc. requesting a No Further Action and Case Closure for NJDEP incident # 99-02-04-1605-43.

As stated in my March 2, 2000 letter addressed to your attention, the Department cannot provide a "no further action" until such time that an oversight document is in place and it has been determined that all investigation and remedial activities have been completed in accordance with the "Technical Requirements for Site Remediation". Thus far, ExxonMobil has failed to enter into an oversight agreement with the Department with regard to case #99-02-04-1605-43.

You are again reminded that NJDEP case #99-02-04-1605-43 pertains to suspected contamination that may have occurred due to historical site activities; previous investigations have disclosed a number of areas of concern at the site that may have contributed to regional ground water contamination. These areas of concern include, but are not limited to septic/waste disposal systems and the former floor drain system. Exxon has been advised on numerous occasions that the site will continue to be considered a potential source of regional ground water contamination until such time that ALL areas of environmental concern at the site have been identified and evaluated in accordance with the Technical Requirements. In the April 20, 2000 letter from Groundwater & Environmental Services, it was reported that a file review was conducted at the Branchburg Township Building Department and "[d]ocuments pertaining to the closure of former dry wells or bay drains were not found." Please be advised that mere lack of

documentation does not constitute grounds to dismiss these areas as contributing sources to regional ground water contamination. Hence these areas and the site in general will remain as potential sources of regional ground water contamination in the Branchburg area.

Please contact me at 609/633-1165 if you have any questions regarding this letter. Your continued cooperation in this matter is appreciated.

Sincerely,

Robert Beretsky
NJDEP/DRPSR/BFMC&R
Compliance and Cost Recovery

c: Dave Nickerson, Bureau of Underground Storage Tanks
Karen Pollack, Groundwater & Environmental Services, Inc.

ATTACHMENT II

ARCHER & GREINER
A PROFESSIONAL CORPORATION

COUNSELLORS AT LAW

ONE CENTENNIAL SQUARE
P.O. BOX 3000
HADDONFIELD, N.J. 08033-0968
856-795-2121
FAX 856-795-0574

HTTP://WWW.ARCHERLAW.COM

PHILADELPHIA OFFICE
ONE SOUTH BROAD STREET
SUITE 1620
PHILADELPHIA, PA 19107
215-568-4166
FAX 215-568-2843

PRINCETON OFFICE
700 ALEXANDER PARK
SUITE 102
PRINCETON, NJ 08540
609-580-3700
FAX 609-580-0051

FLEMINGTON OFFICE
80 MAIN STREET
FLEMINGTON, NJ 08822
908-788-9700
FAX 908-788-7854

MARC A. ROLLO

DIRECT DIAL:
(856) 354-3061

EMAIL ADDRESS:
mrollo@archerlaw.com

December 23, 2002

Mr. Robert Beretsky
NJ Department of Environmental Protection
Division of Remediation Support
Bureau of Site Assessment and Investigation
P.O. Box 028
Trenton, NJ 08635-0028

RE: Exxon Service Station # 3-2558
936 Route 202
Branchburg Twp., Somerset County
NJDEP Case #99-02-04-1605-43

Dear Mr. Beretsky:

Our representation is on behalf of Exxon Mobil Corporation ("ExxonMobil") in connection with the NJDEP's request for further action at the above referenced location, as detailed in your letter of November 4, 2002.

Although ExxonMobil disagrees with the NJDEP's assessment that the Exxon station is a source of groundwater contamination which has impacted private wells in the vicinity of the Route 202 Corridor, and has on more than one occasion expressed why it believes this is so, ExxonMobil remains committed to the closure of Case No. 99-02-02-1605-43.

Accordingly, ExxonMobil is agreeable to entering into a Memorandum of Agreement ("MOA") which addresses the areas and compounds of concern existing under the above case number. ExxonMobil shall submit this document shortly and shall, thereafter, gather and resubmit documentary support as the first phase of its Preliminary Assessment and Site Investigation ("PA/SI"). Additionally, having submitted the oversight document recommended

by the NJDEP, ExxonMobil shall move for closure for each of those areas of concern which ExxonMobil believes that it has satisfied the Technical Requirements for Site Remediation.

Specifically, ExxonMobil shall resubmit its request for closure as it relates to the appearance of stained soil near the storage area. As the NJDEP is aware, after approximately one cubic yard of soil was excavated from the area, post excavation sampling revealed no compounds of concern. Furthermore, a sample of the excavated soil was analyzed, again resulting in no compounds of concern. Additionally, groundwater sampling in the area of the former fuel oil UST also revealed no compounds of concern.

Similarly, with respect to the NJDEP's request for a PA/SI relating to the other areas of concern (i.e. unknown wells, septic/waste disposal systems and former floor drain system), ExxonMobil has provided to the NJDEP all information in its files related to these issues as part of its response to Requests for Information, and has conducted a file review at the Township of Branchburg Building Department. Documents pertaining to the closure of former dry wells or bay drains were not found in such files. Moreover, ExxonMobil has maintained, without response from the NJDEP that the TCE detected in MW-5 at the Exxon station is attributable to another party and is migrating onto the Exxon station from an off-site source. In support of this, ExxonMobil notes that TCE was not identified in any of the post excavation samples and has not been found in any shallow monitoring wells. Lastly, maps previously submitted to the NJDEP indicate that MW-5 is side gradient of the facility's tank field and repair bay, demonstrating that neither of these locations could have been a source of the on-site detection of TCE.

Putting aside the above reasons why ExxonMobil believes that it has established grounds for closure, and without waiving its right to rely upon these as appropriate, ExxonMobil shall move forward with its submission of a MOA and it looks forward to working with the NJDEP to achieve closure at this location. ExxonMobil also remains willing to meet with the NJDEP to discuss these issues.

Additionally, I note for your reference that the ExxonMobil Territory Manager assigned to this location is John Hannig, who can be reached at (908) 474-6637. If you have any questions or wish to discuss this matter, please feel free to contact me.

Sincerely,

MARC A. ROLLO

cc: John Hannig, ExxonMobil
Alex Majewski (GES-NJ)
Rene Gonzalez, ExxonMobil

ATTACHMENT JJ

- Do not purge
- packer, bags or low flow

New Jersey Department of Environmental Protection
Division of Remediation Management and Response
Bureau of Ground Water Pollution Assessment

MAR 19 2003

MEMORANDUM

TO: Nick Sadano, Bureau of Site Assessment and Investigation/Oversight Resources Allocation Element

FROM: Sarah M. Kinsel, Geologist, BGWPA

SITE: Exxon Service Station #3-2558 (Block 42/lot 8)
936 Route 202, Branchburg Township, Somerset County

Referral Date: 2-20-03
Referral Type: SIW
Referral Completion Date: 3-14-03

As requested, BGWPA is providing recommendations for groundwater investigation at the above referenced site. A site plan has been attached showing locations for borings and wells recommended by BGWPA.

Comments and Recommendations:

1. BGWPA's recommendations focus primarily on groundwater investigation issues. Soil sampling at each bedrock borehole/well cluster location is recommended. Bureau of Site Assessment and Investigation (BSAI) may want to require additional soil sampling locations in the scope of work to allow for assessment of potential areas of concern (AOC). BGWPA defers to BSAI for requirements concerning criteria for selection of soil sampling intervals, sampling procedures and analytical requirements.

2. It is NJDEP's understanding that Exxon has sealed and abandoned all groundwater monitor wells that were previously installed at this site. Based on regional geologic mapping, strike of bedding in the Passaic Formation in this area is estimated to be north-south and bedding planes dip east at 11-16°. Exxon shall verify structural data for the Passaic Formation in this area through site investigation activities.

3. NJDEP is recommending a phased groundwater investigation for this site. The emphasis of the initial phase of this groundwater investigation will be to evaluate hydrogeologic conditions and background groundwater quality. Exxon did not determine background groundwater quality during prior groundwater sampling activities at this site. Evaluation of background groundwater quality will assist in determining whether groundwater contamination detected at this site may be attributable to on-site or off-site sources. Groundwater quality sampling at the site has indicated that groundwater is impacted with chlorinated compounds, in particular trichloroethylene. Potable wells located downgradient of the site were sampled. Results indicate groundwater downgradient of the site has been contaminated with trichloroethylene. May and June 2002 sampling results for two downgradient wells, located at block 55, lot 6 ("PARTW") and block 55, lot 4 ("VARJW"), have been enclosed.

4. Refer to the attached site plan for required groundwater investigation/sampling locations. Sampling locations may be adjusted as necessary for utilities with prior approval from NJDEP. Temporary open boreholes shall be installed at four locations, designated #1, 2, 3 and 4, for evaluation of hydrogeologic conditions through the use of borehole geophysics and depth discrete groundwater quality sampling. Temporary borehole #1 will be located in the up-dip direction from potential on-site AOCs at a location that may be hydraulically upgradient of potential AOC's. Temporary borehole #2 will be located along strike of bedding at a distance from potential AOCs. Temporary borehole #3 will be installed at the location of a former monitor well, designated MW-5, where elevated levels of trichloroethylene (TCE) were reported in a sample collected in 1995. Temporary borehole #4 will be located in the down-dip direction from potential AOCs. Temporary boreholes #1, 2 and 3 shall be 100 to 120 feet deep. Temporary borehole #4 shall be 30 to 40 feet deeper that boreholes #1, 2 and 3 to correct for dip of formation in this area.

5. Temporary boreholes shall be logged so that data concerning geologic conditions and groundwater flow conditions can be obtained. Logging and groundwater sampling activities must be completed soon after boreholes are installed to limit the time boreholes are open. Exxon should consider use of temporary liners in boreholes. Boreholes may need to be developed to facilitate logging. Logging methods should include video televiewer, optical televiewer, heatpulse flowmeter, and temperature, caliper, fluid conductivity, gamma, resistivity and SP logs. Once logging has been completed, results shall be use to select appropriate groundwater sampling intervals in each borehole. Exxon must discuss sampling intervals and technical rationale for same with NJDEP prior to collecting samples. All groundwater samples shall be analyzed for VO +10, MTBE and TBA.

minimum of one

6. Data from temporary boreholes will be used to select monitoring intervals for permanent wells. Exxon shall provide preliminary logging and groundwater sampling results to NJDEP with a proposal for permanent monitor wells. Temporary boreholes can be completed as deep monitor wells. It is anticipated that well clusters with two to three permanent monitor wells will be installed at each of the four temporary borehole locations. Once monitor wells have been installed and surveyed for location and elevation, water levels measurements and groundwater samples shall be collected from each well. Analytical parameters shall include VO +10, MTBE, TBA and lead. Field parameters shall be consistent with the requirements of the groundwater sampling method. Exxon shall use conventional (purge 3 to 5 well volumes) sampling methods for the initial sampling of these wells. Groundwater sampling documentation, as specified in the Department's Field Sampling Procedures Manual (FSPM) shall be provided with groundwater sampling results. Data collected from temporary boreholes and permanent monitor wells will be used to evaluate groundwater flow conditions and background groundwater quality. These data will be used to assess whether groundwater contamination may be attributable to on-site activities or whether this contamination originated from an off-site source.

7. Exxon shall determine the condition of four (4) monitor wells that were installed @1991 by Mobil Oil Corporation on Block 55, lot 5. A copy of the well permit for these wells is enclosed. The well permit shows approximate locations for the wells. Copies of the well records have also been enclosed. These wells shall be sampled as part of the initial sampling event when monitor well clusters installed at locations #1-4 are sampled. Exxon shall obtain permission from current property owners and the NJDEP Site Manager currently assigned to the Route 202 Corridor Groundwater Contamination Area to sample former potable wells located at block 55, lot 6 and block 55, lot 4. These two former potable wells were converted to temporary monitor wells by NJDEP for use in the NJDEP's investigation of groundwater contamination in this area. A plot plan dated 10-31-66 (File No. 3256, Humble Oil and Refining Co.) indicates a possible potable well on the Exxon site near the western site boundary. Exxon shall determine whether this well was properly sealed and abandoned. If not, Exxon shall locate this well and determine its condition for sampling.

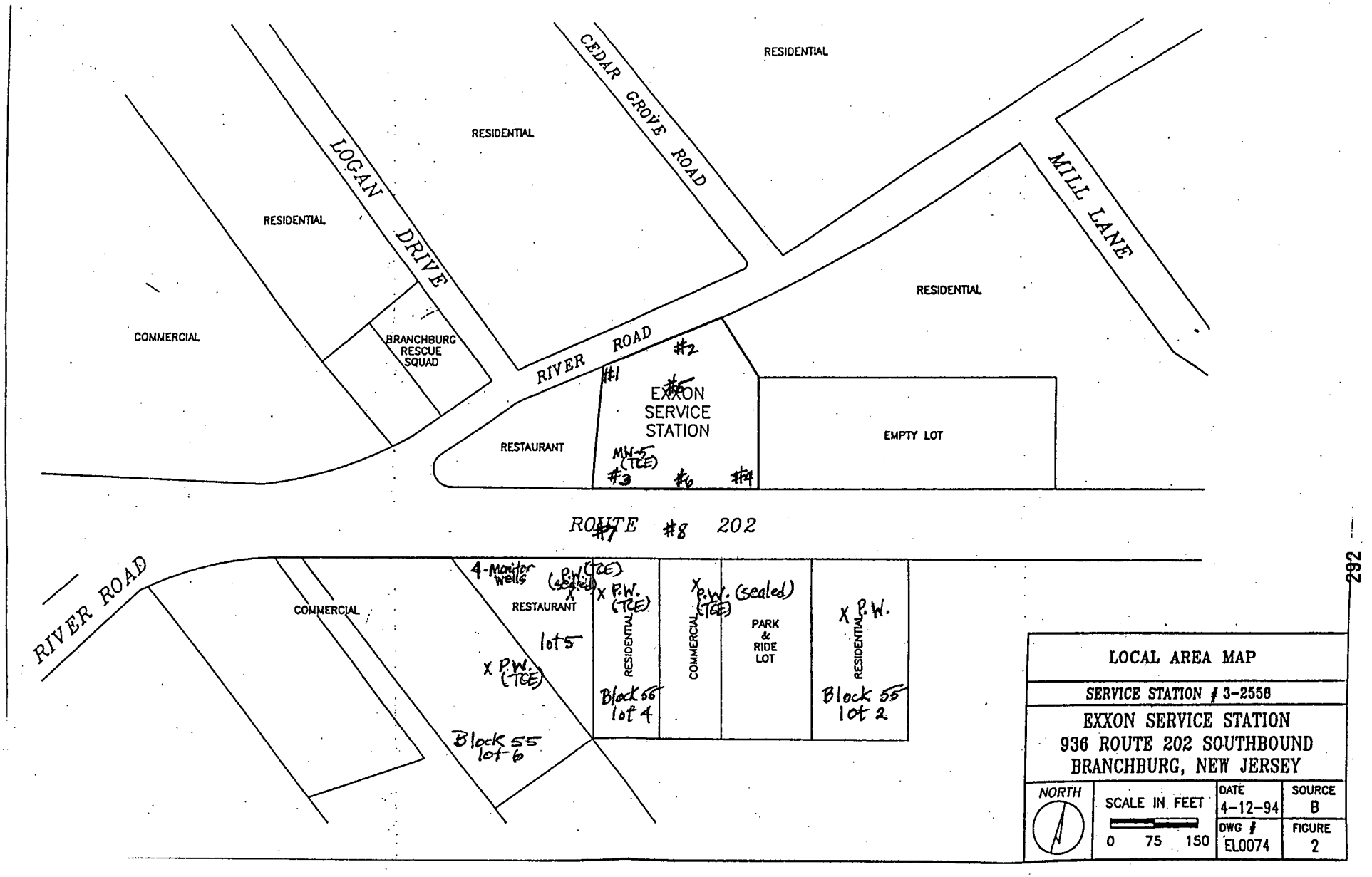
8. The Department strongly recommends installation of a monitor well cluster at the location designated #5 on the attached site plan. Location #5 is located in close proximity to several potential AOCs. Monitoring intervals shall be selected based on results from temporary boreholes #1-4 and other data that may be available. Exxon may install background groundwater sampling points in addition to those required by NJDEP if they believe that additional upgradient groundwater quality data will be necessary to assess whether groundwater contamination at this site may be attributable to off-site sources.

9. The Department recommends installation of monitor well clusters at locations designated # 6, 7 and 8. Installation of monitor wells at these locations, and/or alternative or additional locations, can be deferred pending receipt of data from locations #1, 2, 3, 4 and monitor wells located on block 55, lots 4, 5 and 6. Exxon shall provide a comprehensive report detailing the results of sampling and site characterization activities required in items 1. through 7. with recommendations for additional site characterization activities, including delineation of groundwater contamination attributable to operations at the site. The report shall be submitted to NJDEP within a timeframe acceptable to NJDEP and Exxon.

If you have any questions concerning this memorandum or require additional information, please contact me at 2-3005 or via email.

Attachment 1 – Site Plan with sampling locations
Attachment 2 – Well permit and records for wells on block 55, lot 5
Attachment 3 – Sampling results for wells on block 55, lots 4 and 6

Doc. ID #: TBA



LOCAL AREA MAP

SERVICE STATION # 3-2558

EXXON SERVICE STATION
936 ROUTE 202 SOUTHBOUND
BRANCHBURG, NEW JERSEY

NORTH	SCALE IN FEET	DATE	SOURCE
	0 75 150	4-12-94	B
		DWG # EL0074	FIGURE 2

1 - 8 Borehole, Monitor Well locations

P.W. - Potable Wells: sealed or converted to Monitor Wells

(TCE) - indicates locations where TCE detected

↑ 11-16° regional strike - bedding planes

Attachment 1 - Site Plan with sampling locations

Appendix I - Table 5
Ground Water Samples
Shoplock Sunoco
Analytical Results - Volatiles, TBA and MTBE

Location ID	Ground	SW9SA	SHOPW	SHOPW	PARTW	PARTW	VARJW	VARJW
Sample ID	Water	SW9SA2	SHOPW1	SHOPW2	PARTW1	PARTW2	VARJW1	VARJW2
Lab ID	Quality	492314	489075	492312	489271	492323	489292	492337
Date Sampled	Standard	6/24/2002	5/21/2002	6/24/2002	5/22/2002	6/25/2002	5/23/2002	6/26/2002
Units	(ug/l)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
1,1,1,2-TETRACHLOROETHANE	10	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-TRICHLOROETHANE	30	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROETHANE	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	70	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-TRICHLOROPROPANE	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	9	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMOETHANE		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROBENZENE	600	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHENE (TOTAL)		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	600	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	75	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DIOXANE		50 U	50 U	50 U	50 U	50 U	50 U	50 U
2-BUTANONE	300	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-HEXANONE	100	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-METHYL-2-PENTANONE	400	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACETONE	700	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACROLEIN	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACRYLONITRILE	50	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ALLYL CHLORIDE		1 U	1 U	1 U	1 U	1 U	1 U	1 U
BENZENE	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE		1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOFORM	4	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOMETHANE	10	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON DISULFIDE	800	1 U	1 U	0.38 J	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	50	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROETHANE	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	6	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROMETHANE	30	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	10	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	0.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
DIBROMOCHLOROMETHANE	10	1 U	1 U	1 U	1 U	1 U	1 U	1 U
DIBROMOMETHANE		1 U	1 U	1 U	1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE	1000	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ETHYL METHACRYLATE		1 U	1 U	1 U	1 U	1 U	1 U	1 U
ETHYLBENZENE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ISOBUTYL ALCOHOL		50 U	50 U	50 U	50 U	50 U	50 U	50 U
ISOPROPYLBENZENE	800	1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHACRYLONITRILE		1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYL METHACRYLATE		1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
STYRENE	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
T-BUTYL ALCOHOL	100	50 U	50 U	50 U	50 U	50 U	50 U	50 U
TERT-BUTYL METHYL ETHER	70	1 U	1 U	1 U	17	50 E	1 U	1 U
TETRACHLOROETHENE	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1000	1 U	1 U	1 U	1.2	1 U	0.3 J	1 U
TRANS-1,2-DICHLOROETHENE	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	0.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	1	1 U	1 U	1 U	2.7	1.6	32 D	83 D

Appendix I - Table 5
Ground Water Samples
Shoplock Sunoco
Analytical Results - Volatiles, TBA and MTBE

Location ID	Ground	SW9SA	SHOPW	SHOPW	PARTW	PARTW	VARJW	VARJW
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Lab ID	Quality	492314	489075	492312	489271	492323	489292	492337
Date Sampled	Standard	6/24/2002	5/21/2002	6/24/2002	5/22/2002	6/25/2002	5/23/2002	6/26/2002
Units	(ug/l)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
TRICHLOROFLUOROMETHANE		1 U	1 U	1 U	1 U	1 U	1 U	1 U
VINYL ACETATE	7000	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VINYL CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
XYLENE (TOTAL)	1000	1 U	1 U	1 U	1 U	1 U	1 U	1 U
XYLENE (M,P)		1 U	1 U	1 U	1 U	1 U	1 U	1 U
XYLENE (O)		1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOTAL VOA	500	0 U	0 U	0.38	20.9	51.6	32.3	83

DWR-133M (4/90) SERIAL # 15376

Mail to

Water Allocation
CN 029
Trenton, N.J. 08625

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
TRENTON, N.J.

MONITORING WELL PERMIT

Permit No. 5 — 2538025-4, 2538026-5, 2538027-3, 2538028-1

VALID ONLY AFTER APPROVAL BY THE D.E.P. COORD #: 2531.6,88

Owner Mobil Oil Corporation
Address 1200 RT. 22 EAST
Bridgewater, N.J. 08807

Name of Facility Mobil Service Station
Address RT 202 AND River RD.
Branchburg, N.J

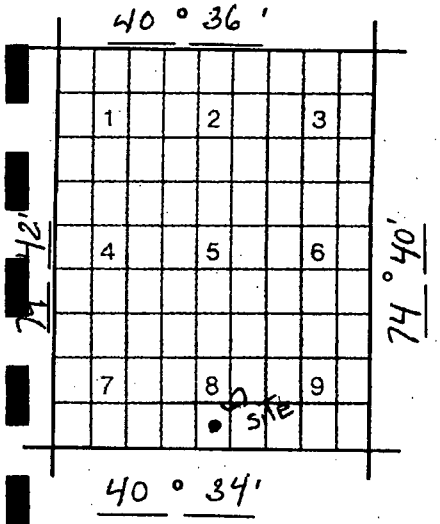
Driller H.P. Drilling
Address 1600 Broadway
Westville, N.J

Diameter of Well(s)	4 Inches	Proposed Depth of Well(s)	20' ± Feet
# of Wells Applied for (max. 10)	4	Will pumping equipment be installed? YES ☐ NO ☑	
Type of Well (see reverse)	Monitoring	If Yes, give pump capacity	N.A GPM

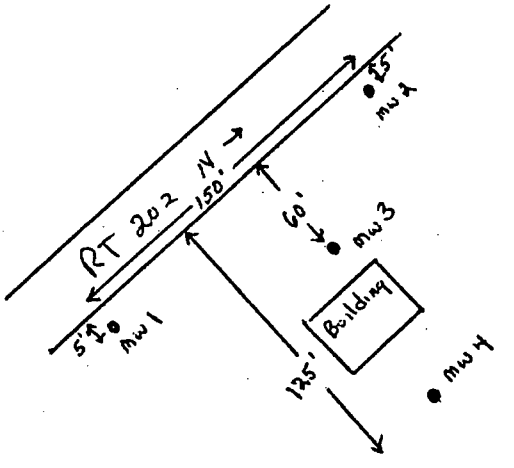
LOCATION OF WELL(S)

Lot #	Block #	Municipality	County
5	55	Branchburg	Somerset

State Atlas Map No. 25



Draw sketch of well(s) nearest roads, buildings, etc. with marked distances in feet. Each well MUST be labeled with a name and/or number on the sketch.



N↑

FOR MONITORING WELLS, RECOVERY WELLS, OR PIEZOMETERS, THE FOLLOWING MUST BE COMPLETED BY THE APPLICANT. PLEASE INDICATE WHY THE WELLS ARE BEING INSTALLED:

- ☐ Spill Fund Case
- ☐ ECRA Case
- ☐ CERCLA (Superfund) Site
- ☐ RCRA Site
- ☐ Underground Storage Tank
- ☐ NJPDES Municipal Discharge Permit
- ☐ NJPDES Industrial Discharge Permit
- ☐ Div. Hazardous Waste Mgmt. Enforcement Case
- ☐ Div. Water Resources Enforcement Case
- ☐ Water Supply Aquifer Test Observation Well
- ☑ Other (explain) Environmental Assessment Evaluation

Case I.D. Number

This Space for Approval Stamp

JAN 24 1991

FOR D.E.P. USE
- ☒ Issuance of this permit is subject to the conditions attached. (see next page) For monitoring purposes only
- ☒ The well(s) may not be completed with more than 25 feet of total screen or uncased borehole.
- ☐

SEE REVERSE SIDE FOR IMPORTANT PROVISIONS AND REGULATIONS PERTAINING TO THIS PERMIT.
In compliance with N.J.S.A. 58:4A-14, application is made for a permit to drill a well as described above.

Date 1/23/91

Signature of Driller Ronald J Barlow License # 1135

Signature of Owner Ronald J Barlow agent for Mobil Oil

COPIES: Water Allocation — White and Pink; Health Dept. — Yellow; Owner — Blue; Driller — White

WELPMT 098 1096

DWR-138 M
6/89

New Jersey Department of Environmental Protection
Division of Water Resources

MONITORING WELL RECORD

E

Well Permit No. 25 - 38025
Atlas Sheet Coordinates 25 : 31 : 688

OWNER IDENTIFICATION - Owner MOBIL OIL CORPORATION
Address 1200 RT. 22 EAST
City BRIDGEWATER State NJ Zip Code

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-1
County Somerset Municipality BRANCHBURG TWP. Lot No. 5 Block No. 55
Address RT 202 + River RD

TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed 1/29/91
Regulatory Program Requiring Well Case I.D. #
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) LAND TECH REMEDIAL Tele. # 1-908-530-4300

WELL CONSTRUCTION

Total depth drilled 48 ft.
Well finished to 45.5 ft.
Borehole diameter:
Top 9 in.
Bottom 8 in.
Well was finished: ☐ above grade ☑ flush mounted
If finished above grade, casing height (stick up) above land surface — ft.
Was steel protective casing installed? ☑ Yes ☐ No

	Depth to Top (ft.) [From land surface]	Depth to Bottom (ft.) [From land surface]	Diameter (inches)	Type and Material
Inner Casing	.5	30.5	4	sch 40 PVC FJT
Outer Casing (Not Protective Casing)	.5	7.0	8	sch 40 PVC
Screen (Note slot size)	30.5	45.5	4	sch 40 PVC FJT .020
Tail Piece	—	—	—	
Gravel Pack	26	48		#1 Morrie
Annular Seal/Grout	0	26		Bentonite / Cement
Method of Grouting	Positive Displacement			

Static water level after drilling 21.38 ft.
Water level was measured using M-scope
Well was developed for 1/2 hours at less than 1 gpm
Method of development BAILER
Was permanent pumping equipment installed? ☐ Yes ☑ No
Pump capacity — gpm
Pump type: —
Drilling Method ROTARY
Drilling Fluid WATER Type of Rig FAILING 1500
Name of Driller RON BARBER
Health and Safety Plan submitted? ☐ Yes ☑ No
Level of Protection used on site (circle one) None (D) C B A
N.J. License No. 1135
Name of Drilling Company HP DRILLING, INC.

GEOLOGIC LOG (Copies of other geologic logs and/or geophysical logs should be attached.)

0 - 1.5' Asphalt + gravel fill
1.5 - 4.0 Red Brown FINSAND and silt to gravel
4.0 - 47.0 Red Brown shale

I certify that I have drilled the above-referenced well in accordance with all well permit requirements and all applicable State rules and regulations.

Driller's Signature Ronald J Barlup Date 1/31/91

COPIES: White & Green - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
6/89

New Jersey Department of Environmental Protection
Division of Water Resources

MONITORING WELL RECORD

Well Permit No. 25 - 38026
Atlas Sheet Coordinates 25 : 31 : 688

OWNER IDENTIFICATION - Owner MOBIL OIL CORPORATION
Address 1200 RT. 22 EAST
City BRIDGEWATER State NJ Zip Code

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW 2
County Somerset Municipality BRANCHBURG TWP. Lot No. 5 Block No. 55
Address RT 202 + River Rd.

TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed 1/28/91
Regulatory Program Requiring Well Case I.D. #
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) LAND Tech Remedial Tele. # 1-908-530-4300

WELL CONSTRUCTION

Total depth drilled 48 ft.
Well finished to 45.5 ft.
Borehole diameter:
Top 8 in.
Bottom 8 in.
Well was finished: ☐ above grade ☑ flush mounted
If finished above grade, casing height (stick up) above land surface — ft.
Was steel protective casing installed? ☑ Yes ☐ No

	Depth to Top (ft.) [From land surface]	Depth to Bottom (ft.) [From land surface]	Diameter (inches)	Type and Material
Inner Casing	.5	30.5	4	sch 40 PVC FJT
Outer Casing (Not Protective Casing)	—	—	—	
Screen (Note slot size)	30.5	45.5	4	sch 40 PVC FJT .020
Tail Piece	—	—	—	
Gravel Pack	27	48		#1 morrie
Annular Seal/Grout	0	27		Bentonite/Cement
Method of Grouting	Positive Displacement			

Static water level after drilling 21.99 ft.
Water level was measured using M-Scope
Well was developed for 1/2 hours at less than 1 gpm
Method of development BAILER
Was permanent pumping equipment installed? ☐ Yes ☑ No
Pump capacity — gpm
Pump type: —
Drilling Method ROTARY
Drilling Fluid WATER Type of Rig FAILING 1500
Name of Driller Ron BARBER
Health and Safety Plan submitted? ☐ Yes ☑ No
Level of Protection used on site (circle one) None (D) C B A
N.J. License No. 1135
Name of Drilling Company HP DRILLING, INC.

GEOLOGIC LOG (Copies of other geologic logs and/or geophysical logs should be attached.)

0-4" Asphalt + BASE
4"-4' Red Brown F/m SAND + silt m gravel
4'-48' Red Brown shale

I certify that I have drilled the above-referenced well in accordance with all well permit requirements and all applicable State rules and regulations.

Driller's Signature Ronald J Barlup Date 1/31/91

COPIES: White & Green - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
6/89

New Jersey Department of Environmental Protection
Division of Water Resources

9

MONITORING WELL RECORD

Well Permit No. 25 - 38027
Atlas Sheet Coordinates 25 : 31 : 688

OWNER IDENTIFICATION - Owner MOBIL OIL CORPORATION
Address 1200 RT. 22 EAST
City BRIDGEWATER State NJ Zip Code

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-3
County Somerset Municipality Lot No. Block No.
Address RT 202 + River RD BRANCHBURG TWP. 5 55

TYPE OF WELL (as per Well Permit Categories) Date well completed 1/25/91
Regulatory Program Requiring Well MONITORING Case I.D. #
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) LAND Tech Remedial Tele. # 1-908-530-4300

WELL CONSTRUCTION

Total depth drilled 47' ft.
Well finished to 45.5 ft.
Borehole diameter:
Top 8 in.
Bottom 8 in.
Well was finished: ☐ above grade ☑ flush mounted
If finished above grade, casing height (stick up) above land surface — ft.
Was steel protective casing installed? ☑ Yes ☐ No

	Depth to Top (ft.) [From land surface]	Depth to Bottom (ft.)	Diameter (inches)	Type and Material
Inner Casing	.5	30.5	4	sch 40 PVC FJT
Outer Casing (Not Protective Casing)	—	—	—	
Screen (Note slot size)	30.5	45.5	4	sch 40 PVC FJT .020
Tail Piece	—	—	—	
Gravel Pack	27	47		#1 Morrie
Annular Seal/Grout	0	27		Bentonite/cement
Method of Grouting	Positive Displacement			

Static water level after drilling 22.16 ft.
Water level was measured using M-Scope
Well was developed for 1/2 hours at less than 1 gpm
Method of development BAILER
Was permanent pumping equipment installed? ☐ Yes ☑ No
Pump capacity — gpm
Pump type: —
Drilling Method Rotary
Drilling Fluid WATER Type of Rig FAILING 1500
Name of Driller Ron Barber
Health and Safety Plan submitted? ☐ Yes ☑ No
Level of Protection used on site (circle one) None (D) C B A
N.J. License No. 1135
Name of Drilling Company HP DRILLING, INC.

GEOLOGIC LOG (Copies of other geologic logs and/or geophysical logs should be attached.)

0 - 4" Asphalt + Base

4" - 8' Red Brown F/M SAND + silt m gravel

8' - 47' Red Brown shale

12' ?

I certify that I have drilled the above-referenced well in accordance with all well permit requirements and all applicable State rules and regulations.

Driller's Signature Ronald J Barber Date 1/31/91

COPIES: White & Green - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
6/89

New Jersey Department of Environmental Protection
Division of Water Resources

MONITORING WELL RECORD

E

Well Permit No. 25 - 38028
Atlas Sheet Coordinates 25 : 31 : 688

OWNER IDENTIFICATION - Owner MOBIL OIL CORPORATION
Address 1200 RT. 22 EAST
City BRIDGEWATER State NJ Zip Code

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW 4
County Somerset Municipality BRANCHBURG TWP. Lot No. 5 Block No. 55
Address RT 202 + River Rd

TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed 1/28/91
Regulatory Program Requiring Well Case I.D. #
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) LAND Tech Remedial Tele. # 1-908-530-4300

WELL CONSTRUCTION

Total depth drilled 47 ft.
Well finished to 45.5 ft.
Borehole diameter:
Top 8 in.
Bottom 8 in.
Well was finished: ☐ above grade ☑ flush mounted
If finished above grade, casing height (stick up) above land surface — ft.
Was steel protective casing installed? ☑ Yes ☐ No

	Depth to Top (ft.) [From land surface]	Depth to Bottom (ft.) [From land surface]	Diameter (inches)	Type and Material
Inner Casing	.5	30.5	4	sch 40 PVC FJT
Outer Casing (Not Protective Casing)	—	—	—	
Screen (Note slot size)	30.5	45.5	4	sch 40 PVC FJT .020
Tail Piece	—	—	—	
Gravel Pack	27	47		# 1 Morrie
Annular Seal/Grout	0	27		Bentonite/Cement
Method of Grouting	Positive Displacement			

Static water level after drilling 24.15 ft.
Water level was measured using M-Scope
Well was developed for 1/2 hours at less than 1 gpm
Method of development Baller
Was permanent pumping equipment installed? ☐ Yes ☑ No
Pump capacity — gpm
Pump type: —
Drilling Method Rotary
Drilling Fluid WATER Type of Rig 1500 Failing
Name of Driller Ron Barber
Health and Safety Plan submitted? ☐ Yes ☑ No
Level of Protection used on site (circle one) None (D) C B A
N.J. License No. 1135
Name of Drilling Company HP DRILLING, INC.

GEOLOGIC LOG (Copies of other geologic logs and/or geophysical logs should be attached.)

0 - 8" Topsoil with stone
8" - 7' Red Brown F/M SAND and silt m gravel
7' - 47' Red Brown shale

I certify that I have drilled the above-referenced well in accordance with all well permit requirements and all applicable State rules and regulations.

Driller's Signature Ronald J Barber Date 1/31/91

COPIES: White & Green - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

WELREC 077 0323

ATTACHMENT KK

James E. McGreevey
Governor

State of New Jersey
Department of Environmental Protection
Site Remediation Program
Division of Remediation Support
Bureau of Site Assessment & Investigation
300 Horizon Center, P.O. Box 407
Trenton, New Jersey, 08625

Bradley M. Campbell
Commissioner

July 10, 2003

8/7/03
Ms Sinclair recieved this on 25 & 28th
Sinclair will speak with J. Hannig monday.

John Hannig
ExxonMobil
Global Remediation
P.O. Box 730
1900 E. Linden Avenue
Linden, New Jersey 07036

Re: Exxon Service Station #3-2558

Dear Mr. Hannig:

The New Jersey Department of Environmental Protection (NJDEP) has reviewed your June 2, 2003 application for a Memorandum of Agreement. The application is not responsive to numerous letters sent to ExxonMobil regarding areas of concern (AOC) which were not adequately addressed.

As was noted in the NJDEP's February 10, 1999 letter to Exxon, the site is a suspected source of regional ground water contamination. The NJDEP has undertaken a publicly funded ground water investigation in Branchburg to determine the source of chlorinated volatile organic compounds which are known to have impacted potable wells. This investigation has made progress in eliminating a potential source of chlorinated VOCs and has thereby narrowed the geographic area where potential sources may be found.

Exxon Service Station #3-2558 (the site) is located within that reduced geographic area. As previously noted, the site has AOCs which have not been adequately investigated and which may have discharged chlorinated VOCs. The site is also apparently hydrogeologically upgradient of former potable wells most heavily impacted by trichloroethene. Furthermore, a monitor well on the site in a downgradient location from the AOCs has revealed trichloroethene at 96 parts per billion.

Therefore, the Bureau of Environmental Measurements and Site Assessment, with technical assistance from the Bureau of Ground Water Pollution Assessment has prepared a phased sampling plan to investigate the known areas of concern we have identified at the site. That plan is attached for your inspection.

The NJDEP's previous work in Branchburg has made it clear that a robust ground water sampling plan is needed in order to address the complex hydrogeology of this area. To that end, a phased plan was designed to overcome these complexities and provide data to support a comprehensive evaluation of the site. The first phase provides an initial assessment that is appropriate for the site and based in part on our previous experience in Branchburg. The second phase of the plan allows for delineation of ground water contamination and recognizes that additional on-site sampling positions may be necessary to verify a complete delineation has been achieved. The second phase of the plan will be completed and sent to Exxon for comment after phase one is complete.

Also attached please find an access agreement to allow this bureau and our contractors to enter the site for the purposes of carrying out the attached plan. This access agreement makes allowances for the phased nature of the work plan. Please return a fully executed access agreement to this office. Adequate notification will be provided to ExxonMobil prior to start of work. Should ExxonMobil refuse to sign the access agreement, this office will refer this matter to the Office of the Attorney General for access.

Should you have any questions regarding this letter, please contact Nick Sodano of this Bureau at 609-584-4275.

Very truly yours,

William Lowry, Bureau Chief
Bureau of Environmental
Measurements and Site Assessment

C: Brendan Ruane, DAG
Dave Nickerson, BNCM
Robert Beretsky, BEMSA
Sarah Kinsel, BGWPA
Luis Sanders, BCM
Nick Sodano, BEMSA

State of New Jersey
Department of Environmental Protection
Site Remediation Program
Publicly Funded Site Remediation

JAMES E. MCGREEVEY
Governor

BRADLEY M. CAMPBELL
Commissioner

IN THE MATTER OF THE EXXONMOBIL REFINING & SUPPLY COMPANY SITE	:	SITE ACCESS AGREEMENT
	:	
	:	
Respondent(s).	:	

RECITALS

ExxonMobil Refining and Supply Company ("Property Owner") grants the New Jersey Department of Environmental Protection, its contractor(s) and subcontractor(s) (collectively "DEP") permission to enter upon certain property located at 936 Route 202 South, Branchburg Township, Somerset County ("the Site"), this property being also known and designated as Block 42, Lot 8, on the Tax Map of Branchburg Township.

PURPOSE

1. DEP and the Property Owner are entering into this Agreement so DEP may enter upon the Site to perform a site investigation. A copy of the Phase 1 work plan for the site investigation is attached to this Agreement as Attachment A. DEP shall perform the site investigation in accordance with all applicable statutes and regulations. DEP shall submit the additional phases of the work plan for the site investigation to the Property Owner for review and comment as DEP develops them. The Property owner shall, within fifteen (15) calendar days of receiving a phase of the work plan, provide DEP with comments in writing. If the Property Owner does not provide DEP with comments in the prescribed time and manner, DEP shall consider the work plan satisfactory to the Property Owner and shall commence the site investigation accordingly.

DEP COMMITMENTS

2. In return for the Property Owner granting DEP access to the Site for the site investigation, DEP agrees to the following:

a. DEP will give the Property Owner reasonable notice before commencing the on-site portion of the site investigation.

b. DEP will, to the greatest practicable extent, perform the site investigation in a way that minimizes interference with the Property Owner's ongoing business operations. If DEP determines, in its sole discretion, that any on-site activity may interfere with the Property Owner's business operations, DEP will first notify, and consult with, the Property Owner before commencing the activity. DEP will, however, decide, in its sole discretion, how to perform the activity.

c. The Property Owner shall have the opportunity to be present at any on-site sampling event, and to split any sample DEP takes to the extent the sample can be split. The Property Owner shall do so only when [he/she/it] agrees to:

i. Provide DEP with notice of [his/her/its] intention to be present when DEP performs the sampling, and [his/her/its] intent to split the sample(s);

ii. Not in any way interfere with the timing or performance of the sampling;

iii. Supply, at [his/her/its] own cost and expense, any equipment DEP requires for splitting the sample(s); and

iv. Perform, or arrange for the performance of, the analysis of each split sample [he/she/it] obtains, at [his/her/its] own cost and expense.

d. DEP shall, as practicable, return the Site to the general condition that existed before DEP's use or occupancy of the Site.

e. If DEP, in its sole discretion, determines that any well/boring/probe hole/piezometer installed during

the site investigation is no longer needed, DEP shall properly close and seal the well/boring/probe hole/piezometer.

f. If DEP, in its sole discretion, determines any well installed during the site investigation is no longer needed, DEP may, in its discretion, afford the Property Owner the option of retaining ownership of the well for [his/her/its] private use. The Property Owner shall then be responsible for satisfying all requirements governing the well's present or intended use, including abandonment.

g. DEP shall, at the Property Owner's request, provide the Property Owner with a copy of any final report concerning the site investigation to the extent the report does not contain any confidential or otherwise privileged information.

INDEMNIFICATION & INSURANCE

3. The State, for itself, its successors and assigns, agrees to indemnify the Property Owner, [its/his/her/their] heirs, successors and assigns, from any and all liability, claims, damages and actions that may result from the negligent use or occupancy of the Property by the State, subject to the following exceptions: 1) The State shall have no obligation to indemnify or hold harmless the Property Owner, [its/his/her/their] heirs, successors or assigns, or any of them, for any claims or damages for which the State would have no liability under the New Jersey Tort Claims Act (N.J.S.A. 59:1-1 to -12-3) and the New Jersey Contractual Liability Act (N.J.S.A. 59:13-1 to -14-4); 2) the liability, if any, of the State shall be subject to the availability of the State of New Jersey's funds, and 3) the agreement of the State to indemnify, as set forth in this paragraph, shall not apply to any claims, actions or damages that may arise out of, be occasioned by or result from any condition existing on, or which did exist on, the Property at the time of the execution of this agreement, or at any time prior to the execution of this Agreement.

4. Besides any other requirement placed upon it by law and the contract(s) the State awards for the site

investigation any contractor DEP retains for the site investigation shall obtain comprehensive general liability insurance of $1,000,000 per occurrence and in the aggregate. The policy shall include an endorsement for broad form property damage coverage. Further, the contractor shall:

a. Maintain such insurance for the duration of the site investigation;

b. Name the Property Owner as an additional insured on the certificate of insurance for each policy required by the Request for Proposal DEP issues for the site investigation; and

c. No later than fifteen (15) calendar days before commencing any on-site activity, deliver to the Property Owner a copy of each certificate or policy evidencing the required coverage, with proof of payment of the premium, and a conformed copy of this Agreement.

TERM OF AGREEMENT

5. The Property Owner shall promptly sign, date and return this Agreement to DEP. This Agreement shall take effect as of the date DEP's authorized representative signs and dates it.

6. Unless terminated sooner by mutual agreement of the parties, this Agreement shall expire upon DEP giving the Property Owner written notice that use of the Site, or the site investigation is complete.

GENERAL CONDITIONS

7. The Property Owner agrees to notify DEP, in writing, no later than 30 calendar days before transferring title to some or all of the Property. The Property Owner shall submit this notice to the Director, Division of Remediation Support, New Jersey Department of Environmental Protection, 401 East State Street, PO Box 413, Trenton, New Jersey 08625-0413.

8. This Agreement, including the Attachment(s), represents the entire agreement between the parties concerning site access, and supersedes all prior negotiations, representations, or agreements, either written or oral, unless otherwise expressly stated.

9. This Agreement may only be modified by the mutual agreement of the Parties. Further, any modification to this

Agreement shall be in writing unless DEP, in its sole discretion, determines circumstances allow otherwise. Where any modification is verbal, DEP will document the modification, in writing, as soon as practicable.

10. This Agreement applies to and is binding upon DEP, the Property Owner, their successors and assigns.

New Jersey Department of
Environmental Protection

Ronald T. Corcory
Assistant Director

Dated:

EXXONMOBIL REFINING & SUPPLY COMPANY

Name: _____

Title: _____

Dated:

ACCAGR1.FRM

rev. 2/03

WORK PLAN FOR SITE INVESTIGATION

SITE NAME: Exxon Service Station #3-2558

JOB NUMBER: T050MG0P **ACTIVITY CODE:** V68B

ADDRESS: 936 Route 202

MUNICIPALITY: Branchburg **COUNTY:** Somerset

EPA ID NUMBER: None

ACCESS GRANTED ? No

SITE CONTACT(S):

John Hannig, Exxon	**PHONE:** 908-474-6637
Marc A. Rollo, Archer & Greiner	**PHONE:** 856-795-2121
Ben Haith, GES Environmental	**PHONE:** 732-919-0100

AERIAL PHOTOS REVIEWED ? YES

PURPOSE OF SAMPLING PLAN

This is phase one of a multi-phase sampling workplan. This phase proposes installation of borings to be used for the collection of geophysical data. It is expected that the data will enable NJDEP to:

1. Design a monitor well system (phase 2) that will be adequate to discriminate between contaminants which may be entering or exiting the site.
2. Collect ground water samples(phase 2) from the above noted monitor well system

BACKGROUND INFORMATION:

The Branchburg Exxon site (the site) is located on Block 42, Lot 8 of the tax map of Branchburg Township. The Route 202 Corridor Ground Water Contamination Area is located in the Newark Basin, which is a northeast-southwest trending fault trough filled with fluvial and lacustrine sediments of the late Triassic and early Jurassic age. The bedrock geologic unit present in the area of interest is the late Triassic-age Passaic Formation.

During the period 1988 through 1994, the Township of Branchburg (Branchburg) discovered volatile organic compounds, including benzene, toluene, ethyl benzene, xylenes, methyl tert butyl ether (MTBE), tetrachloroethene (PCE), trichloroethene (TCE) and 1,1-dichloroethene within commercial and domestic wells in Branchburg

at concentrations above Maximum contaminant Levels (MCL)[1]. The wells, which were arrayed on either side of Route 202, were collectively referred to as the Route 202 Corridor Ground Water Contamination Case.

By June 30, 1993, the NJDEP installed Point of Entry Treatment Systems at six wells and determined that extension of public water lines to the buildings within the impacted area would be the most protective and cost effective long-term remedy for the ground water contamination. By March 18 1997, the NJDEP and Branchburg completed the extension of water lines into the area[2].

On June 30, 1993 the NJDEP issued a Source Survey Report which identified sixteen (16) potential sources for the above noted contamination including the Branchburg Exxon site.

A plot plan prepared by ExxonMobil and dated October 31, 1966 depicts the site. Due east and slightly north of the on-site "service center" building is a 1,000 gallon septic tank and an approximately 800 square foot leaching field with a diverter box. The plot plan also shows a 550 gallon waste oil tank 10 feet southeast of the southeast corner of the service building. Former operator (Alan Conners) indicated that the size of the waste oil tank was 1,000 gallons, but other documents relating to the tank indicated that it was 550 gallons.

The original underground tanks were apparently removed from the site during July 1987. The documents regarding tank removals provided limited information. They revealed that despite the confirmed discharge, no post excavation soil sampling was conducted. A February 15, 1988 letter from ExxonMobil notes that "the majority of the soil stockpiled came from the area around the slop oil tank.", indicating that a discharge had occurred from the above noted waste oil tank.

During 1989, Exxon/Mobil installed three monitor designated MW1, MW2, and MW3, at the site. These three wells were approximately 16.5 feet deep and were constructed with 15 feet of screen. MW3 was installed between the western boundary of the site and the western wall of the on-site service building (See "Areas of Concern Map). Soil samples were collected from each boring during installation of the monitor wells. The samples were not analyzed for chlorinated volatile organic compounds. However, the results did indicate that MW3 location had the highest petroleum contamination of 3,300 mg/Kg. These monitor wells appear to have been abandoned by late 1989.

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[1] MCLs are set pursuant to the Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq.

[2] As of July 18, 2002, the NJDEP expended $1,253,176.23 for expenses from the regional contamination.

In December 1992, an underground waste oil tank (installed during 1987) was removed from the site under the direction of Groundwater and Environmental Services (GES), the consultant representing ExxonMobil. It was reported that visible staining was evident around the fill port and along the sides of the tank. Free phase petroleum product was also observed on ground water that accumulated in the tank excavation at approximately 5.5 feet below grade. Approximately 10 cubic yards of contaminated soil was removed. On January 12, 1993, a composite sample of the excavated soil was analyzed for Total Organic Halides (TOX) and revealed 55 ppm. This result for a composited sample is indicative that halogenated (including chlorinated) organic compound(s) were present in the excavated soil at or in excess of 55 ppm.

By letter dated August 15, 1995, the NJDEP requested that ExxonMobil delineate the vertical extent of contamination emanating from the site. Accordingly, ExxonMobil installed 2 monitor wells during December 1995 screened at 41 to 61 feet below grade. These wells, which were designated MW4 and MW5, were sampled in December 1995. An additional well, designated MW6 may have been installed, but no data is available at this time to confirm whether this well was ever installed. The sampling results from MW5 revealed that trichloroethene (TCE) was detected at a concentration of 96 ug/L. MW5 was located at the southwestern corner of the property. Subsequent ground water sampling did not include analyses of ground water samples for chlorinated organic compounds.

Water elevations measured in on-site monitor wells show a distinct difference in hydraulic head between the shallow and deep wells. The shallow wells had static water levels of approximately 90[3] feet while the deep wells had static water levels of approximately 75 feet. These measurements correspond approximately to 10 feet and 25 feet below grade respectively. This difference suggests a number of environmental conditions. First, it suggests that maps depicting lateral flow for the shallow zone cannot be used to depict lateral flow in the deep zone(s). This head difference indicates a potential for a component of ground water to flow vertically downward at the site. The magnitude of this potential flow is controlled local hydrogeologic conditions. Groundwater flow conditions are locally affected by pumping[4] from domestic wells and other types of supply wells. Use of domestic wells in this area has decreased, but may not have been completely eliminated subsequent to installation of water lines along Route 202 in Branchburg.

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[3] This value (supplied by ExxonMobil) is relative to a local datum. Often, surveyors will assign a value of 100 to the local datum. The static water level will then be subtracted from this arbitrarily assigned 100 value.

[4] The NJDEP pump test in Branchburg during 2002 indicated that moderate pumping rates influence local wells.

Available information suggests that all on-site monitor wells were sealed and abandoned by Exxon in late 1999 or early 2000.

On February 4, 1999, the NJDEP conducted an inspection of the site. The inspection revealed that multiple floor drains (now sealed) existed in each automobile service bay within the site building. Also noted was a sink in the service area which is believed to have formerly discharged to the septic system.

Available data suggests that contaminants discharged on site may potentially migrate into deeper water-bearing zones in the bedrock aquifer[5]. Groundwater flow conditions have not be adequately characterized to provide sufficient information concerning groundwater flow conditions.

[5] In regard to downward flow, we note that the 1966 ExxonMobil plot plan indicates the presence of an on-site potable well between areas of concern and MW5.

AREA OF CONCERN	SAMPLE ID	AREA/VOLUME OF AOC	NUMBER OF SAMPLES	SAMPLE JUSTIFICATION
Waste Oil Tank(s)	NA	Unknown	NA	This phase of work includes installation of 4 open boreholes and geophysics (see table below and attached map). The location of the boreholes are intended to monitor the whole site, not particular areas of concern. Geophysics results will inform the second phase of work which will include design and construction of a ground water monitor well system and ground water quality sampling. Subsequent phases may involve additional on-site well locations to better define background or to better monitor areas of concern.
Septic System	NA	Unknown	NA	
Contaminated Soil	NA	Unknown	NA	
Floor Drain System (sealed)	NA	Unknown	NA	
Storage Area	NA	Unknown	NA	

312

Note: Areas of Concern are based upon what is known to NJDEP. Other areas of concern may exist.
NA stands for not applicable

Will Geoprobe be utilized for sample collection? No

Who will be conducting drilling? Contractor

Will Field GC be utilized for field screening? No

Are any borings planned to be greater than 50 feet? All four will be greater that 50.
If yes, contact the Boring Permit Coordinator to assist in completing permit application.

NOTE: Include a site map with the sampling locations identified and highlighted and ground water flow and north direction identified.

MONITORING WELLS

ACCESS TO KEYS?

CONVERSION FACTORS (CF): 2"= .16 6"= 1.46
4"= .65 8"= 2.6

Borehole Number	Location	Diameter	Comments
1	Northwest corner of site (See attached map)	To be determined	Boring to be drilled from 100 to 120 feet below grade. Complete geophysics and install liner to temporarily seal boring.
2	North border of site at mid point from east to west (See attached map)	To be determined	Boring to be drilled from 100 to 120 feet below grade. Complete geophysics and install liner to temporarily seal boring.
3	Southwest corner of site (See attached map)	To be determined	Boring to be drilled from 100 to 120 feet below grade. Complete geophysics and install liner to temporarily seal boring.
4	Southeast corner of site (See attached map)	To be determined	Boring to be drilled from 120 to 160 feet below grade. Complete geophysics and install liner to temporarily seal boring.

313

POTABLE WELLS

OWNERS NAME	ADDRESS	OWNER NOTIFIED
NA		

AQUEOUS SAMPLE

SAMPLE TYPE	NUMBER OF SAMPLES	TYPE OF ANALYSIS
MONITORING WELL	NA	
GROUND WATER		
SURFACE WATER		
POTABLE WELL		
DUPLICATE		
MS/MSD		
TOTAL		

NON-AQUEOUS SAMPLE

SAMPLE TYPE	NUMBER OF SAMPLES	TYPE OF ANALYSIS
SOIL	NA	
SEDIMENT		
DUPLICATE		
MS/MSD		
TOTAL		

AQUEOUS BLANKS

SAMPLE TYPE	NUMBER OF SAMPLES	TYPE OF ANALYSIS
FIELD BLANK	NA	
TRIP BLANK		
AMBIENT BLANK		

LABORATORY PERFORMING ANALYSIS: NA

STAFF DESK PHONE AND RADIO CALL NUMBERS

STAFF MEMBER	DESK PHONE	PAGER NUMBER	RADIO CALL
CYR	584-4276	888-964-6426	HSMA 73
DUDLEY	584-4285	800-914-6906	HSMA 17
FOWLER	588-7314	888-341-6188	HSMA 92
HOKE	584-4289	800-493-0442	
POGWIST	584-4230	888-992-0948	
ROZYCKI	584-4284		
SODANO	584-4275	888-992-0948	HSMA 83
SORCE	584-4287	888-964-6380	HSMA 87
VAN VELDHUISEN	584-4282	888-992-1769	HSMA 96
VOGEL	584-4291	800-914-6711	HSMA 25
WARD	584-4277	800-914-6942	
MOBILE LAB	371-3980		
WAREHOUSE	448-8688		
KLOO	584-4271	888-341-6203	HSMA 88
CORCORY	633-1480		

DIRECTIONS TO SITE FROM HORIZON CENTER

Route 195 West to Routh 295 North. Route 295 North to Route 206 North. Route 206 North to Route 202. Route 202 South until pass over South Branch of Raritan River. This is Branchburg. Continue South on 202 until intersection with River Road. Exxon is on North side of Route 202 at this location.

INJURIES WHILE ON THE JOB

For billing purposes the treating facility should be given the following information:

1. The injury/illness is occupationally related
2. The person requiring treatment is a NJDEP employee
3. Bill to: Horizon Casualty Services
33 Washington Street
Newark, New Jersey 07102
800-985-7777

NOTE: DO NOT RELEASE ANY PERSONAL INSURANCE OR ANY OTHER PERSONAL INFORMATION TO THE TREATING FACILITY.

1. **EMERGENCY CARE**

a. Should emergency medical assistance/treatment be necessary make a reasonable effort to go to the Horizon Healthcare Network Services Treatment Facility selected, however if the emergency is life threatening, then proceed directly to the nearest emergency hospital.

b. Report your injury to your supervisor

c. Your supervisor should contact the Employee Services Unit immediately.

d. A case number and compensation ID card will be issued to you.

2. **NON-EMERGENCY CARE**

a. Should non-emergency medical assistance/treatment be necessary go to the Horizon Healthcare Network Services Treatment Facility selected.

b. Report your injury to your supervisor

c. Your supervisor should contact the Employee Services Unit immediately

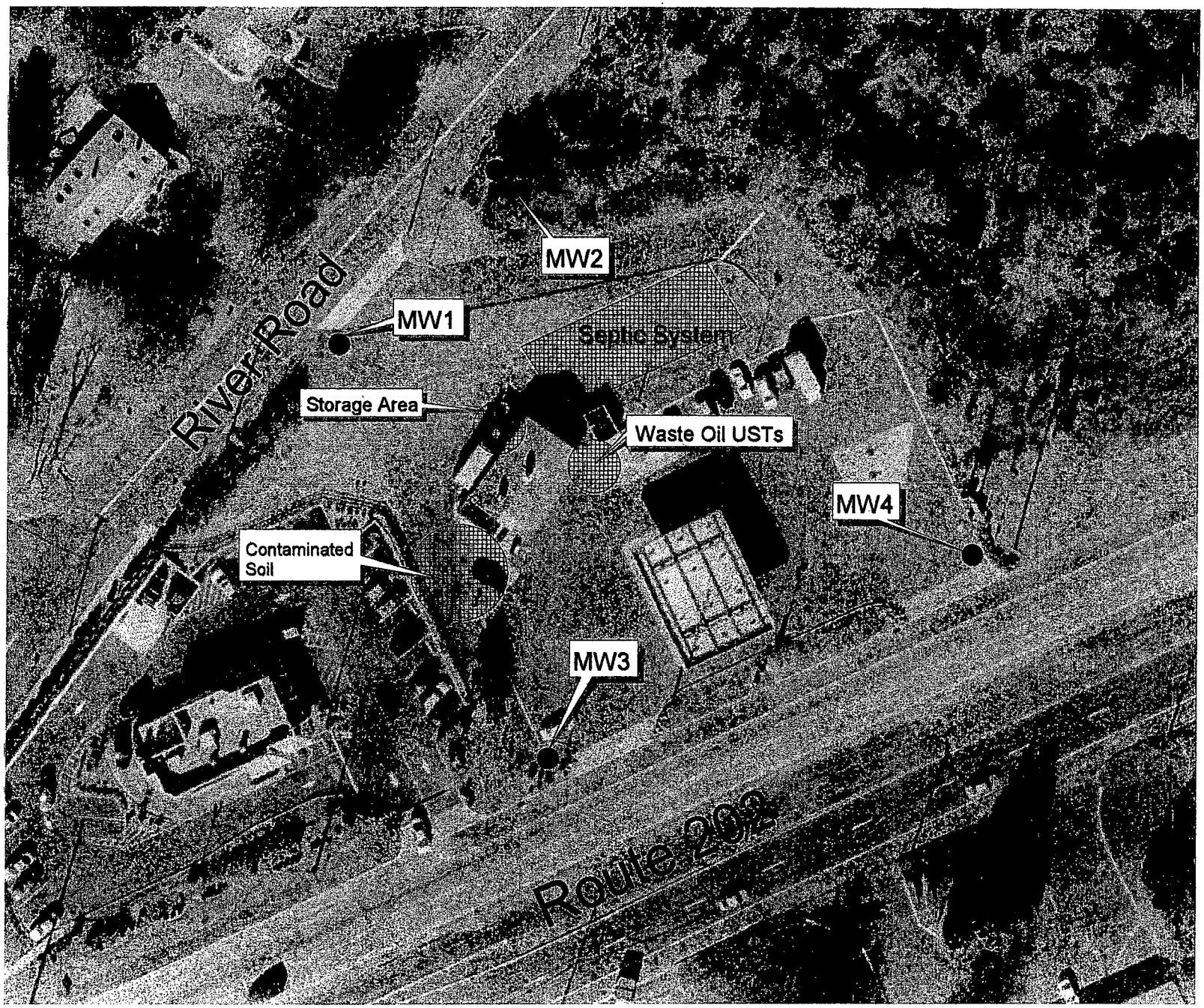
d. A case number and compensation ID card will be issued to you.

Employee Services Unit (Maria Diem) **609-984-3412**

Office of Site Safety and Health **609-984-9779**

WORK PLAN APPROVAL SIGNATURES		**DATE**
CASE COORDINATOR		5/28/03
SUPERVISOR		6/20/03
~~SECTION~~ BUREAU CHIEF		7/7/03

Areas of Concern and Proposed Well Locations



ATTACHMENT LL

ARCHER & GREINER
A PROFESSIONAL CORPORATION

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PLAZA ONE
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908-788-9700
FAX 908-788-7854

PHILADELPHIA OFFICE
ONE SOUTH BROAD STREET
SUITE 1620
PHILADELPHIA, PA 19107
215-568-4166
FAX 215-568-2843

WILMINGTON OFFICE
1300 NORTH MARKET STREET
SUITE 700
WILMINGTON, DE 19801
302-777-4350
FAX 302-777-4352

STACEY J. SINCLAIR

Email Address:
ssinclair@archerlaw.com

Direct Dial: (856) 354-3086
Direct Fax: (856) 673-7086

August 20, 2003

Via Federal Express

William Lowry, Bureau Chief
Bureau of Environmental Measures and Site Assessments
300 Horizon Center
P.O. Box 407
Trenton, New Jersey 08625

RE: Exxon Facility #3-2558
936 Route 202
Branchburg Twp., Somerset County
NJDEP Case #99-02-04-1605-43

Dear Mr. Lowry:

Our representation is on behalf of Exxon Mobil Corporation ("ExxonMobil") in connection with the New Jersey Department of Environmental Protection's ("NJDEP") response to ExxonMobil's submitted Memorandum of Agreement ("MOA") and the NJDEP's request for access, as detailed in your letter dated July 10, 2003.

Although ExxonMobil disagrees with the NJDEP's assessment that the Exxon Facility is a source of groundwater contamination which has impacted private wells in the vicinity of Route 202 corridor, ExxonMobil submitted a MOA, as requested by the NJDEP, in a good faith effort to investigate the areas of concern ("AOC") and to close case #99-02-1605-43. ExxonMobil is surprised by the DEP's reaction that the MOA is "nonresponsive" given that NJDEP did not comment on this office's December 23, 2002 correspondence, which sets forth that a Preliminary Assessment/ Site Investigation ("PA/SI") would be performed for the AOCs in question.

ExxonMobil is prepared to continue its investigation of the AOCs in accordance with the Technical Requirements for Site Remediation. In an effort to provide the Department with more detail, ExxonMobil has revised its MOA, which shall be submitted under separate cover, to include a first phase soil investigation, followed by a groundwater investigation, if and as needed. Specifically, five soil borings will be advanced in the area of the former septic leach field/former floor drain and two soil borings will be advanced in the area of concern identified as

"contaminated soil". Continuous samples will be collected and monitored using field-appropriate instruments such as a photo-ionization detector. Samples exhibiting characteristics such as odor, staining and elevated PID readings will be submitted for laboratory analysis. Should all samples be deemed "clean" based upon field observations, samples will be collected from the base of the leach field.

Although the NJDEP has drafted a phased, groundwater sampling plan, ExxonMobil respectfully disagrees with this as the initial step to this investigation. Rather, ExxonMobil believes that an initial soil investigation is more appropriately tailored to fully investigate the outstanding AOCs. ExxonMobil believes this to be the case given the past history at this site. Specifically, TCE was sampled for in MW1 – MW3 (overburden wells) twice in 1993 and reported as ND. TCE was analyzed for in MW4 (bedrock well) in 1995 and was reported as ND. MW5 was constructed as a bedrock monitoring well, screened from 41 to 61 feet below grade. Although TCE was detected in MW5, its presence does not alone indicate there is a source of TCE on site. Should data from ExxonMobil's soil boring program proposed for the former septic field and AOC "contaminated soil" indicate these are source areas, a groundwater characterization and assessment plan will be developed and submitted to the Department for approval as soon as practical.

ExxonMobil is prepared to begin its soil investigation as soon as the NJDEP approves the MOA and ExxonMobil will conduct whatever groundwater investigation is dictated by the results of the soil investigation, in accordance with the Technical Requirements. ExxonMobil believes this to be the most direct course of action to fully investigate the AOCs. However, ExxonMobil is happy to meet with the Department to further discuss the NJDEP's concerns or any other additional information which the Department may have to support its proposed groundwater investigation.

If you have any questions or wish to discuss this matter further, please do not hesitate to contact me.

Very truly yours,

ARCHER & GREINER
A Professional Corporation

By: Stacey J. Sinclair
Stacey J. Sinclair

CC: Nick Sodano, BEMSA (via facsimile & Federal Express)
John Hannig, ExxonMobil
Alex Majewski (GES-NJ)
Marie C. McGowan, ExxonMobil

ATTACHMENT MM

James E. McGreevey
Governor

State of New Jersey

Department of Environmental Protection
Site Remediation Program
Division of Remediation Support
Bureau of Environmental Measurements and Site Assessment
PO Box 407
Trenton, New Jersey 08625-0407
(609) 584-4280

Bradley M. Campbell
Commissioner

Stacey J. Sinclair
Archer & Greiner

Re: Our recent telephone conversation and contacts with John Hannig

Dear Ms. Sinclair:

I am in receipt of your August 20, 2003 letter. As we discussed, the investigation proposed by Exxonmobil in your letter does not address the environmental concerns raised by the NJDEP.

Based upon our conversation, I understood that your client may be willing to undertake the scope of work as described in our July 10, 2003 letter, but you suggested that we have a detailed discussion with Mr. John Hannig regarding same. The basic concern by Exxonmobil being that the scope of work should bring closure.

As I noted, the scope of work we have supplied to you has phases, with each successive phase dependant upon results we have yet to receive. As data is received, this office will provide timely communication regarding subsequent phases, if necessary. At this time we can only give you our sincere commitment to draw conclusions in writing when the data supports same. We have done so for other sites in the immediate vicinity and see no reason why Exxonmobil should be an exception.

As promised, I have contacted Mr. Hannig and supplied him with electronic data that is immediately available. We are in communication now to arrange for appropriate staff to engage in a telephone conference regarding the details of the first phase of work.

Very truly yours,

Nick Sodano, HSMS 1
609-584-4275
609-584-4298 (fax)

VIA FACSIMILE – 856-795-0574

ATTACHMENT NN

James E. McGreevey
Governor

State of New Jersey

Department of Environmental Protection
Site Remediation Program
Division of Remediation Support
Bureau of Site Assessment & Investigation
300 Horizon Center, P.O. Box 407
Trenton, New Jersey, 08625

Bradley M. Campbell
Commissioner

September 15, 2003

John Hannig
ExxonMobil
Global Remediation
P.O. Box 730
1900 E. Linden Avenue
Linden, New Jersey 07036

Re: Exxon Service Station #3-2558

Dear Mr. Hannig:

The New Jersey Department of Environmental Protection (NJDEP) thanks you for your time this morning during our conference call. This letter will serve to memorialize certain points which were discussed and to transmit certain documents which you requested.

The overview of our conversation is that NJDEP has agreed not to seek access at this time to the above noted site and in turn Exxonmobil has agreed to conduct certain remedial activities. Exxonmobil will submit a detailed scope of work (SOW) for remedial activities in draft to this office for review. This office in turn will submit any comments to Exxonmobil for modification of the draft SOW. Once the SOW is ~~satisfactory to both parties, Exxonmobil will submit the SOW as an attachment~~ to a Memorandum of Agreement application. It was noted that the SOW is within the definition of a remedial investigation (RI) and that Exxonmobil should choose RI as the remedial activity to be overseen in the MOA.

During our conversation this date, Exxonmobil requested the following (attached) documents:

a. Contact information for FLUTe technology.
b. Table 5 of the Shoplock Sunoco report by Kimball.
c. Narrative of the Shoplock Sunoco report by this office.
d. Copies of the Mobil monitor well reports.
e. Route 202 GWIA report.
f. Sketch of McDonald's site with wells noted.

Regarding specific details for the SOW as discussed this date, the following issues should be addressed in the draft SOW. NJDEP expects that the draft SOW will be submitted within thirty (30) calendar days of receipt of this letter.

Coordination of Subcontractors: The NJDEP noted that certain tasks should be bid out concurrently so that contractors schedules and NJDEP approvals can be efficiently coordinated. Exxonmobil must contact Mr. Mike Miller of NJDEP's Bureau of Water Allocation (BWA) at 609-984-6831 for approval to install open boreholes in the bedrock that exceed the 25 foot limit established by N.J.A.C. 7:9D et seq (Well Construction and Maintenance; Sealing of Abandoned Wells; see N.J.A.C. 7:9D-2.8 – Deviation from construction standards). ExxonMobil will also need prior approval from BWA to use the FLUTe "blank liners"[1], as discussed during today's conference call. Once approval is obtained from BWA, Exxonmobil should arrange for the construction of properly sized blank liners prior to the drilling of the boreholes. In this manner, the FLUTe blank liners (or alternative) will be ready for immediate installation upon conclusion of drilling and development. Additionally, the geophysics contractor should be ready to conduct the work in all four boreholes soon after installation of the liners. If properly coordinated, the installation of wells, blank liners and conducting of geophysics could all occur within two to three weeks.

Drilling, Development & Well Technology: The NJDEP does not require rock coring in this instance. The borings should not be constructed by a method that would increase the likelihood of injecting drilling fluids and solids into the formation. Steel casings in nearby wells have been installed to a depth of approximately 20 feet below grade for shallow bedrock wells and approximately 50 feet for intermediate depth wells. Exxonmobil must implement a method of temporarily sealing the boring while geophysical evaluation is occurring[2]. Exxonmobil should also consider what well design it may ultimately employ to monitor vertical zones. To the maximum extent practicable, Exxonmobil should construct the borings to accommodate the final well design, as this may affect the diameter of the borehole. It is very important that a diligent effort is made to develop the well to clarity prior to logging boreholes. This is especially important for use of the optical televiewer. This effort requires that ExxonMobil plan for the proper disposal of a significant volume of potentially contaminated groundwater. Finally, it is suggested that borehole #3 (former MW5) be drilled last to minimize the time available for cross-contamination prior to installation of a blank liner.

[1] NJDEP does not require that Exxonmobil engage FLUTe for temporary sealing of the borehole. Exxonmobile may propose another method.

[2] If Exxonmobil uses blank liners to temporarily seal the boring, it must install a subgrade pit.

Multi-level Well Technologies: A number of methods exist to monitor various vertical zones within a single borehole, but these monitor well designs are reviewed and approved by the NJDEP on a case-by-case basis. The NJDEP was considering the use of the multi-port FLUTe monitoring system, but recognizes that the Bureau of Water Allocation may not have approved use of same before Exxonmobil begins its work[3]. Should Exxonmobil not wish to seek approval for the FLUTe system, it should plan to evaluate other monitor well designs or install monitor well clusters to adequately monitor water-bearing zones and contaminated intervals in the bedrock aquifer identified during borehole logging and vertical profiling of VOCs.

Geophysics: While the details of geophysics was not discussed, the NJDEP wishes to provide results which can be easily reviewed by the New Jersey Geologic Survey[4]. To this end, Exxonmobil should assure that the following geophysical tools are used: The Mount Sopris system is used to measure the diameter of the borehole (caliper log), and physical properties of both the geological formation (gamma radiation, electrical conductance/resistivity logs) and the water within the borehole (fluid temperature and electrical conductance/resistivity logs). The Robertson GeoLogging system is used to obtain video and/or optical imaging of the borehole walls. Use of the optical televiewer is recommended to obtain structural data for characterizing the bedrock formation such as orientation of bedding planes and fractures. The Heat-Pulse flowmeter is used to identify fractures where in-flow/out-flow of groundwater occurs and the rate of flow. The deliverables for this data should be electronic to the maximum extent practicable.

Water Quality Parameters: The NJDEP is requiring a full volatile organic compound scan. Any analytical method which achieves detection limits below the Ground Water Quality Standards is acceptable, but the method must include MTBE and TBA. A HazSite compliant, electronic dataset for all results must be submitted. A paper copy of all analytical quality control information must be submitted so that NJDEP can conduct a quality assurance review of the analytical work.

Reporting: With the exception of geophysics work noted above, the NJDEP is requiring reporting of raw data for this project as soon as the data is produced. For instance, upon receipt of ground water quality data by GES and/or Exxonmobil, a copy of same should be forwarded to the NJDEP immediately. NJDEP will consult with GES and

---

[3] The "blank liner" by FLUTe has been approved. However, the FLUTe multi-port system has not yet been approved and would require review by the New Jersey State Well Drillers & Pump Installers Examining & Advisory Board. If Exxonmobil wishes to use the FLUTe multiport system, it will have to seek approval by calling 609-984-6831.

[4] It is recognized that geophysics is highly specialized skill and that GES and Exxonmobile will likely receive a report that provides interpretation of the results. NJDEP is willing to wait for such a report but also wishes to interpret the results independently.

Exxonmobil prior to issuance of a final NJDEP document and consider any submittals made by Exxonmobile that interpret results. However, the NJDEP does not agree to wait for data while GES and/or Exxonmobil conduct an interpretive process.

Schedules: Exxonmobil should research its intended SOW and produce a schedule for same. This schedule should be attached to the draft SOW.

Should you have any questions regarding this letter, please contact me at 609-584-4275.

Very truly yours,

Nick Sodano, HSMS I
Bureau of Environmental
Measurements and Site Assessment

Via CERTIFIED MAIL, RETURN RECEIPT REQUESTED

ATTACHMENT OO

ExxonMobil
Refining & Supply Company
Global Remediation
P.O. Box 730
1900 E. Linden Avenue
Linden, New Jersey 07036

John Hannig
Territory Manager
Environmental Remediation
U.S. Retail Service Stations

ExxonMobil
Refining & Supply

OCT 30 2003

Nick Sodano
Department of Environmental Protection
Bureau of Environmental Measures and Site Assessment
P.O. Box 434
401 East State Street
Trenton, New Jersey 08625-0434

Re: *Draft Scope of Work*
Exxon Service Station #3-2558
936 Route 202 South
Branchburg, Somerset County, New Jersey
NJDEP Case #99-02-04-1605-43

Dear Mr. Sodano,

Enclosed, please find a draft scope of work (SOW) for the above-referenced Exxon service station. This scope of work has been prepared in cooperation with the New Jersey Department of Environmental Protection (NJDEP) to evaluate the possible presence of a TCE source at the site.

Upon your written approval of this SOW, it will be submitted to your attention as an attachment to a Memorandum of Agreement (MOA). Upon acceptance of the MOA, the scope will be implemented. It is anticipated work will begin in late November to early December, barring complications.

Please do not hesitate to contact me with any questions or concerns at (908) 474-6637 or Brad Smyth of Groundwater and Environmental Services, Inc. at (856) 642-0410, extension 13.

Sincerely,

John Hannig

Enclosure

c: D. Mauro, GES-NJ
B. Smyth, GES-NJ
ExxonMobil/GES, File-NJ

Exxon Service Station 3-2558
936 Route 202
Branchburg, Somerset County, New Jersey
Attachment 1 – Scope of Work

Groundwater and Environmental Services, Inc. (GES) has been contracted by ExxonMobil Refining and Supply Company (ExxonMobil) to conduct environmental assessment activities at the Exxon Service Station (#3-2558) located at 936 Route 202, Branchburg, Somerset County, New Jersey. This assessment is being conducted in cooperation with the New Jersey Department of Environmental Protection (NJDEP) to evaluate the possible presence of a TCE source on the site. The work plan outlined below has been prepared to meet requirements set forth by the NJDEP.

This work plan consists of the installation of four groundwater monitoring wells to between 120 and 160 feet below grade surface (bgs), depicted as MW1D through MW4D on the attached Proposed Well Location Map. MW1D, MW2D, and MW4D will be drilled as six-inch in diameter open boreholes into bedrock to approximately 120 feet bgs. MW3D will be installed as a six-inch in diameter open borehole into bedrock to approximately 160 feet bgs.

Subsequent to completion, each boring will be developed, analyzed via geophysical techniques, and sealed with a blank FLUTe® liner. Upon analysis of the geophysical data, the final well construction specifications for each borehole will be calculated and the wells will be finished as such.

It is anticipated that the initial phase of field work (boring installation and geophysical investigation) will take six to eight working days to complete The first day will be used for vacuum-assisted hand-clearing of the boring locations. Steel casing will be driven ten feet into bedrock at all four boring locations on the second day. The following days will be spent drilling the boreholes. Subsequent to completion of each boring to the desired depth, purge water for well development will be loaded into a tanker truck for off-site disposal. Once development has been deemed sufficient, down-hole geophysics will be conducted. Geophysical analysis of each well will consist of measurements via three-arm caliper, temperature and conductivity, optical televiewer, high-resolution acoustic televiewer, and heat pulse flowmeter methods. Upon completion of the geophysical investigation, each boring will be sealed using a blank FLUTe® liner.

It is anticipated that it will take two to four weeks to adequately analyze data collected from the geophysical investigation. Upon completion of analysis, well completion details (screen interval(s) and depth(s)) will be determined. At a minimum, a screened interval will exist somewhere between 41 and 61 feet bgs in MW3D to investigate a historic TCE presence in that location. The wells will be completed as such, followed by a round of groundwater sampling from each screened interval in each well. Samples will be submitted for laboratory analysis for VO+10 including MTBE and TBA.

Geophysical and analytical data will subsequently be provided to the NJDEP.

ATTACHMENT PP

James E. McGreevey
Governor

State of New Jersey

Department of Environmental Protection
Site Remediation Program
Division of Remediation Support
Bureau of Site Assessment & Investigation
300 Horizon Center, P.O. Box 407
Trenton, New Jersey, 08625

Bradley M. Campbell
Commissioner

November 5, 2003

John Hannig
ExxonMobil
Global Remediation
P.O. Box 730
1900 E. Linden Avenue
Linden, New Jersey 07036

Re: Exxon Service Station #3-2558

Dear Mr. Hannig:

The New Jersey Department of Environmental Protection (NJDEP) is in receipt of your October 30, 2003 letter which transmitted a scope of work (SOW). This letter will serve to provide comments for modification of the SOW.

General Comment

The SOW lacked detail. Since Exxonmobil did not incorporate the details of NJDEPs September 15, 2003 letter by reference, I cannot assume that our concerns are specifically addressed by this brief SOW. Some concerns appear to have been ignored.

Specific Comments

Lack of Site Map: Paragraph 2 of the SOW references a Map which was not included. It is assumed that had the map been included, it would mirror the map in our Samping Plan transmitted by William Lowry's letter of July 10, 2003. Please provide a map. DONE 1/28/04

Coordination of Subcontractors: The NJDEP notes that Exxonmobil has chosen the FLUTe blank liner system for the initial borings. But the SOW did not mention installation of a vault for the FLUTe system. This caused concern that perhaps the construction of a vault might not be properly coordinated and would cause delays. Please provide vault specifications in the report. DONE 1/28/04

Multi-level Well Technologies: The SOW language does not indicate that NJDEP will have control over the selection of monitored vertical zones. Exxonmobil should indicate that final well construction will not occur until NJDEP has approved proposed construction specifications.

Geophysics: Exxonmobil has not indicated that geophysical tools used will provide results that are compatible with those used by the New Jersey Geologic Survey. Exxonmobil should indicate that results compatable with Mount Sopris and Robertson GeoLogging systems will be submitted that that deliverables will be electronic.

Water Quality Parameters: Exxonmobil has not indicated that the analytical data will be submitted in a HazSite compliant, electronic format. A paper copy of all analytical quality control information must be submitted so that NJDEP can conduct a quality assurance review of the analytical work.

Reporting: Exxonmobil has not indicated that it will submit raw data for this project as soon as the data is available to Exxonmobil.

Exxonmobil should also indicate that is will submit all manifest or bills of lading information for purge water and analytical information used to support waste classification.

Should you have any questions regarding this letter, please contact me at 609-584-4275.

Very truly yours,

N Sodano

Nick Sodano, HSMS 1
Bureau of Environmental
Measurements and Site Assessment

CERTIFIED MAIL, RETURN RECEIPT REQUESTED

ATTACHMENT QQ

ExxonMobil
Refining & Supply Company
Global Remediation
P.O. Box 730
1900 E. Linden Avenue
Linden, New Jersey 07036

John Hannig
Project Manager
Environmental Remediation
U.S. Retail Service Stations

ExxonMobil
Refining & Supply

Nick Sodano
State of New Jersey
Department of Environmental Protection
Bureau of Environmental Measures and Site Assessment
P.O. Box 434
401 East State Street
Trenton, New Jersey 08625-0434

JAN. 2004 Nick Sodano

Re: *Revised Draft Scope of Work*
Exxon Service Station #3-2558
936 Route 202 South
Branchburg, Somerset County, New Jersey
NJDEP Case #99-02-04-1605-43

Dear Mr. Sodano,

Enclosed, please find a revised draft scope of work (SOW) for the above-referenced Exxon service station. This revised scope of work has been prepared based on the New Jersey Department of Environmental Protection's (NJDEP's) September 15, 2003 correspondence, the NJDEP's comments dated November 5, 2003 in response to the original October 30, 2003 SOW, and your conversation with Brad Smyth of Groundwater & Environmental Services, Inc. (GES) on November 6, 2003.

Upon your written approval of this SOW, it will be submitted to your attention as an attachment to a Memorandum of Agreement (MOA) application. Upon acceptance of the MOA, the scope will be implemented. It is anticipated that field activities will begin in March 2004, pending completion of these steps.

Should you have any questions concerning this correspondence, please contact my office at (908) 474-6637 or Brad Smyth of (GES) at (856) 642-0410, extension 13.

Sincerely,

John Hannig

Enclosure

c: File

Exxon Service Station #3-2558
936 Route 202
Branchburg, Somerset County, New Jersey
Scope of Work

Groundwater and Environmental Services, Inc. (GES) has been contracted by ExxonMobil Refining and Supply Company (ExxonMobil) to conduct environmental assessment activities at Exxon Service Station #3-2558 located at 936 Route 202, Branchburg, Somerset County, New Jersey. This assessment is being conducted in cooperation with the New Jersey Department of Environmental Protection (NJDEP) to evaluate the possible presence of a trichloroethene (TCE) source on the site. The work plan outlined below has been prepared to meet requirements set forth by the NJDEP.

This scope of work (SOW) consists of the drilling of four borings to between 120 and 160 feet below ground surface (bgs), the installation of FLUTe® blank well liners in each of the boreholes, the completion of geophysics at each boring location, installation of FLUTe® multi-level water sampling systems, groundwater sampling from each of the screened intervals, and subsequent reporting. OK

Drilling: Prior to the start of drilling activities, ExxonMobil will contact Mr. Mike Miller of the NJDEP's Bureau of Water Allocation (BWA) for approval to install open boreholes in the bedrock exceeding 25 feet and to install FLUTe® blank liners within the boreholes. Good 12/8/04

Four borings, depicted as monitoring wells MW1D through MW4D on the Proposed Monitoring Well Location Map (Attachment A), will be drilled as six-inch in diameter open boreholes into bedrock utilizing the air rotary drilling method. Borings MW1D, MW2D, and MW4D will be drilled to approximately 120 feet bgs and boring MW3D will be drilled to approximately 160 feet bgs. Boring MW3D (to be completed at the location of former monitoring well MW5) will be drilled last in order to minimize the time available for cross-contamination prior to liner installation. MODIFY

Development: Subsequent to completion, each boring will be developed utilizing a submersible pump. Approximately three volumes will be removed from each boring in order to develop the borehole to clarity prior to geophysical logging. Development water will be pumped directly to a tank truck and disposed of properly off-site. Waste manifests for the disposal of the development water will be submitted to the NJDEP. NO

Geophysics: Following development, geophysical logging will be completed at each borehole prior to the installation of the well liner (detailed in the following section). The logging activities must be performed prior to the installation of the liner as the liner may prevent accurate logging of the borehole/borehole fluid characteristics. For example, caliper logging to determine the diameter of the borehole, fluid temperature and electrical conductance/resistivity logging to measure the physical properties of the water within the

borehole, and the identification of fractures where in-flow/out-flow or groundwater occurs via a Heat-Pulse flowmeter would be ineffective if performed after liner installation.

In addition to the techniques listed above, logging of the geophysical properties of the geological formation via gamma radiation and electrical conductance/resistivity and video logging of the borehole walls will be completed.

Caliper logging and logging of the physical properties of the geologic formation and fluid within the boreholes will provide results compatible with the Mount Sopris system. The optical televiewer, utilized to obtain structural data for characterizing the bedrock formation, will provide results compatible with the Robertson Geologging system. Following completion of the geophysical logging, results will be submitted to the NJDEP and will be in electronic format where possible.

Blank Liner Installation: Following completion of the geophysical logging activities, FLUTe® blank well liners will be installed in each borehole. The blank well liners will serve to temporarily seal the borehole and prevent cross-contamination prior to final well construction. The liners will be installed throughout the entire length of the boreholes and will be housed in a sub-grade vault.

A flush mount manhole will be utilized as the liner vault. As per the FLUTe® specifications, the vault diameter will be a minimum of six inches greater than the borehole casing, the casing will extend a minimum of four inches above the vault floor, and the clearance from the top of the casing to the underside of the manhole lid will be a minimum of eight inches.

Multi-Level Well Installation: Following analysis of the geophysical data, the final well construction specifications for each borehole will be determined and proposed well specifications will be submitted to the NJDEP. Once approved by the NJDEP, FLUTe® multi-port monitoring systems will be developed and installed in each borehole to monitor the water-bearing zones identified during the geophysical logging.

Groundwater Sampling: Following installation of the FLUTe® multi-port monitoring systems, groundwater samples will be collected from each of the monitored zones within boreholes MW1D through MW4D. The groundwater samples will be submitted for laboratory analysis for volatile organic compounds (VOCs), including methyl *tertiary*-butyl ether (MTBE) and *tertiary*-butyl alcohol (TBA), plus a library search via USEPA approved test method 624+10.

Upon receipt from the analytical laboratory, a copy of the groundwater analytical results package, including quality control information, will be submitted to the NJDEP. This data will be submitted to the NJDEP as soon as it is available to ExxonMobil and prior to

the submission of the *Remedial Investigation Report* (RIR). Included with the RIR submission will be a diskette with a HazSite compliant Electronic Data Submission.

Schedule: It is anticipated that the initial phase of field work (boring installation, borehole development, geophysical investigation, and blank well liner installation) will take eight to ten working days to complete. The first day will be used for vacuum-assisted hand-clearing of the boring locations. The following days will be spent driving steel casing and drilling the boreholes. Subsequent to completion of the borings, well development will be completed. Purge water from well development will be loaded into a tanker truck for off-site disposal. It is anticipated that drilling activities and borehole development will be completed in five to six working days. Once development has been deemed sufficient, down-hole geophysics will be conducted.

Geophysical analysis of each borehole will consist of measurements via three-arm caliper, fluid temperature, electrical resistivity/conductance, optical televiewer, high-resolution acoustic televiewer, and heat pulse flowmeter methods. It is anticipated that geophysical logging will be completed in one to two working days. Upon completion of the geophysical investigation, each boring will be sealed using a FLUTe® blank well liner to prevent cross-contamination. Liner installation will be completed in one to two working days.

It is anticipated that it will take two to four weeks to adequately analyze data collected from the geophysical investigation. Upon completion of analysis, well completion details (screen interval(s) and depth(s)) will be determined. At a minimum, a screened interval will exist somewhere between 41 and 61 feet bgs in MW3D to investigate a historic TCE presence in that location. Once finalized, well construction details will be submitted to the NJDEP for review. Upon NJDEP approval of the selected vertical zones to be monitored, multi-port monitoring system specifications will be submitted to FLUTe®. FLUTe® multi-port monitoring system production time, from order to shipping, is typically two weeks. Upon completion, the multi-port monitoring systems will be installed under the supervision of a FLUTe® technician.

Following installation, a minimum of two weeks will be allowed for the FLUTe® multi-port monitoring systems to stabilize and equilibrate with the aquifer. Subsequently, groundwater samples from each screened interval of each borehole will be collected. Groundwater samples will be submitted for laboratory analysis for VOCs, including MTBE and TBA, plus a library search.

Once this SOW is approved by the NJDEP, it will be submitted as an attachment to a Memorandum of Agreement (MOA) application. If the MOA is accepted by the NJDEP without any major changes by February 16, 2004, the following schedule is proposed:

Activity	***Proposed Date(s)***
Borehole hand-clearing	*3/22/04*
Borehole drilling	*3/23/04 - 3/29/04*
Borehole development	*3/30/04*
Geophysical investigation	*3/31/04 - 4/1/04*
FLUTe® blank well liner installation	*4/2/04*
Analysis of geophysical investigation	*4/5/04 - 5/3/04*
Submittal of well specifications to NJDEP	*5/14/04*
Submittal of approved well specifications to FLUTe®	*5/28/04*
FLUTe® multi-port monitoring system installation	*6/23/04 - 6/25/04*
Groundwater sampling	*7/13/04 - 7/14/04*
Submittal of analytical data to NJDEP	*7/30/04*
RIR submittal to NJDEP	*9/30/04*

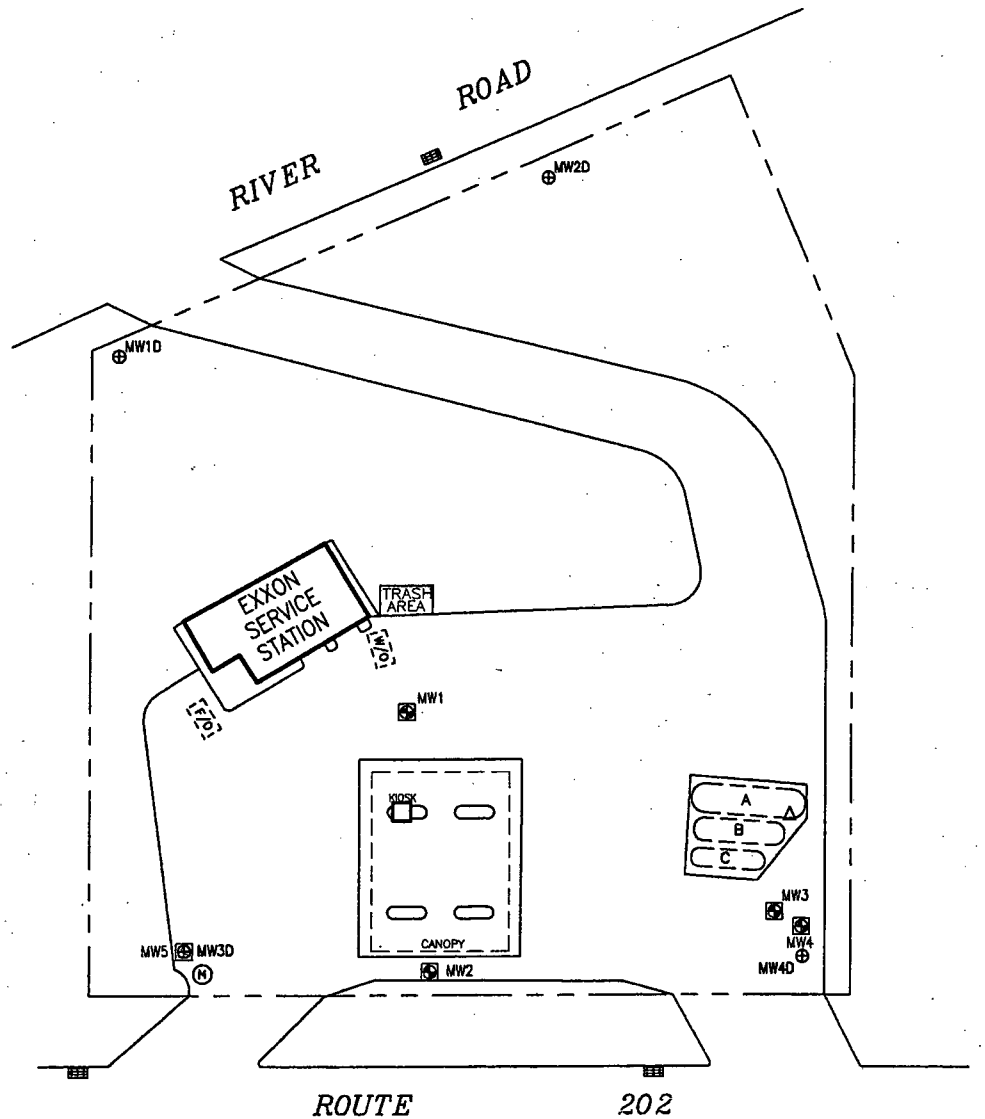
Reporting: A RIR will be submitted to the NJDEP following completion of the investigation. The RIR will detail the field activities outlined by this SOW, provide waste disposal/classification information for soil and groundwater generated during the investigation, and include a diskette with a HazSite compliant Electronic Data Submission. A tentative submittal date of August 31, 2004 is proposed at this time.

Assumptions: This SOW was prepared under the assumption that ExxonMobil will receive approval from the NJDEP's BWA to install open boreholes in bedrock that exceed the 25 foot limit established by N.J.A.C. 7:9D et. seq. and to utilize the FLUTe® blank well liners to temporarily seal the boreholes, and the FLUTe® multi-port monitoring systems to monitor and sample the selected zones. Should either of these items not be approved by the BWA, additional work will be required and schedule delays will be encountered.

In addition, please be advised that delays beyond the control of ExxonMobil and/or GES (i.e. weather, etc.) may be encountered which may cause changes to the schedule proposed herein.

ATTACHMENT A

Proposed Monitoring Well Location Map



LEGEND

- W/O — FORMER 1,000 GAL WASTE OIL TANK
- F/O — 1,000 GAL FUEL OIL TANK
- A — 12,000 GAL GASOLINE TANK
- B — 10,000 GAL GASOLINE TANK
- C — 8,000 GAL GASOLINE TANK
- STORM SEWER INLET
- M — UTILITY MANHOLE
- DISPENSER ISLAND
- △ — BENCH MARK P.K. NAIL EL = 100.00 ft (ASSUMED)
- ABANDONED MONITORING WELL
- ⊕ — PROPOSED MONITORING WELL

DRAFTED BY: T.M. (N.J.)	PROPOSED MONITORING WELL LOCATION MAP
CHECKED BY:	EXXON SERVICE STATION #3-2558 936 ROUTE 202 SOUTHBOUND BRANCHBURG, NEW JERSEY
REVIEWED BY:	Groundwater & Environmental Services, Inc. 1340 CAMPUS PARKWAY, NEPTUNE, NJ 07753
NORTH	SCALE IN FEET: 0 — 40 / DATE: 12-23-03 / FIGURE:

341

M:\Graphics\03000-Wall\Exxon\03-2558 branchburg\3-2558 branchburg SM.dwg, 12/23/2003 09:09:42 AM, TMichaelidis, Tabloid, 1:40, GES

ATTACHMENT RR

James E. McGreevey
Governor

State of New Jersey

Department of Environmental Protection
Site Remediation Program
Division of Remediation Support
Bureau of Site Assessment & Investigation
300 Horizon Center, P.O. Box 407
Trenton, New Jersey, 08625

Bradley M. Campbell
Commissioner

January 29, 2004

John Hannig
ExxonMobil
Global Remediation
P.O. Box 730
1900 E. Linden Avenue
Linden, New Jersey 07036

Re: Exxon Service Station #3-2558

Dear Mr. Hannig:

The New Jersey Department of Environmental Protection (NJDEP) is in receipt of your revised scope of work (SOW) which we received on January 22, 2004.

The revised SOW is acceptable if Exxon makes the following changes. Provided that Exxon makes the following changes, this office suggests that Exxon submit the revised SOW to the NJDEP for execution of a Memorandum of Agreement.

Well Positions on Site Map: This office conducted an inspection of Exxon 3-2558 with Mr. Mario Tamanas, Manager of the station. At that time it was discovered that overhead power lines on River Road would preclude drilling in the road shoulder and a steep incline prevents drilling beyond the shoulder. Likewise, drilling in the street is not preferred and consequently the NJDEP has determined that MW1D and MW2D could be cited in positions depicted on the attached map. The logistical issues at these locations include traffic, slope and obstacles but nonetheless appear manageable. Regarding the position of MW3D, please be advised that the proposal to redrill the exact location of the former MW5 is not acceptable. Exxon shall at a minimum move that location at least 10 feet to the north so as to avoid the zone of grouting for MW5. Exxon should account for the topographic differences in grade when drilling the wells.

Drilling and Development: Steel casings should not extend beyond 30 feet below grade in any well. The NJDEP recognizes that the volume of purge water from well development is a logistical and financial issue for Exxon. Nevertheless, the NJDEP is not in agreement with Exxon's limitation to purge no more than three well case volumes in development of each well. The primary criteria for successful development must be clarity and therefore Exxon must delete its reference to a fixed volume of purge water. It

is understood that all practicable efforts will be made by Exxon to achieve clarity but that reasonable limits exist to this effort.

Multi-level Well Technology: The approval of the multi-port FLUTe monitoring system cannot be authorized by this office. Mr. Mike Miller of NJDEP's Bureau of Water Allocation (609-984-6831) has the authority to grant permission. Exxon's effort in this regard will be helped if this office and our assigned geologist are in concurrence with Exxon's proposal to use FLUTe multilevel technology. Therefore, after the submission of geophysical data to this office and prior to Exxon's approach to Mr. Miller, Exxon should seek a written assessment from this office regarding the use of multi-level technology for Exxon site #3-2558.

Very truly yours,

Nick Sodano, HSMS 1
Bureau of Environmental
Measurements and Site Assessment

CERTIFIED MAIL, RETURN RECEIPT REQUESTED

ATTACHMENT SS

ExxonMobil
Refining & Supply Company
Global Remediation
P.O. Box 730
1900 E. Linden Avenue
Linden, New Jersey 07036

John Hannig
Project Manager
Environmental Remediation
U.S. Retail Service Stations

APR 16 2004

ExxonMobil
Refining & Supply

Mr. Ralph Downs
State of New Jersey
Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Field Operations
P.O. Box 434
401 East State Street
Trenton, New Jersey 08625-0434

Re: *Memorandum of Agreement for Non-Residential Properties*
Exxon Service Station #3-2558
936 Route 202 South
Branchburg, Somerset County, New Jersey
NJDEP Case #: 99-02-04-1605-43

Enclosed, please find a *Memorandum of Agreement for Non-Residential Properties (MOA)* for the above-referenced Exxon service station. This MOA has been prepared as a formal request for Department oversight of cleanup activities pursuant to N.J.A.C. 7:26C et seq. and review of reports pursuant to N.J.A.C. 7:26E et seq. and in accordance with the New Jersey Department of Environmental Protection's (NJDEP's) July 10, 2003 correspondence. Please find attached to the MOA application and the Scope of Work for this investigation, which has been approved by Nick Sodano of the NJDEP Bureau of Environmental Measures and Site Assessment.

Should you have any questions, please do not hesitate to contact my office at (908) 474-6637, or Brad Smyth of Groundwater and Environmental Services, Inc. at (856) 642-0410, extension 13.

Sincerely,

John Hannig

Enclosure

c: Nick Sodano, NJDEP (w/enclosure)
B. Smyth, GES (w/enclosure)
File (w/enclosure)

MEMORANDUM OF AGREEMENT FOR NON-RESIDENTIAL PROPERTIES

This Memorandum of Agreement (Agreement) has been developed so that any party interested in conducting a cleanup at a non-residential property can do so with oversight from the Department. The Department will provide oversight as long as the Department is reimbursed for the cost of its review. This Agreement must be completed in its entirety by the party interested in conducting the cleanup activities and/or the party's authorized agent, and shall include a fully executed copy of the attached certification. The Department can not process any applications unless all the information requested is complete and all questions are answered to the satisfaction of the Department. Once completed the Agreement must be submitted to the following address:

Division of Responsible Party Site Remediation
Bureau of Field Operations
401 East State Street, PO Box 434
Trenton, NJ 08625-0434

Attention: Section Chief - Case Assignment Section

(609) 292-2943

Answer all questions as completely as possible. If you have any questions when completing this form, it is recommended that you contact the Case Assignment Section at (609) 292-2943 between the hours of 8:00 AM and 5:00 PM for assistance.

This Agreement is entered into pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (hereinafter "the Department") by N.J.S.A. 13:1D-1 et seq. and N.J.S.A. 58:10B et seq. and the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq. and the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq. and duly delegated to the Section Chief, Division of Responsible Party Site Remediation, Bureau of Field Operations pursuant to N.J.S.A. 13:1B-4.

This Agreement is to be used as a formal request for Department oversight of cleanup activities pursuant to the Procedures for Department Oversight of the Remediation of Contaminated Sites (N.J.A.C. 7:26C et seq.)and review of reports submitted pursuant to the Technical Rules for Site Remediation (N.J.A.C. 7:26E et seq.).

MEMORANDUM OF AGREEMENT FOR NON-RESIDENTIAL PROPERTIES

CASE NUMBER 99-02-04-1605-43 DATE 04/15/04

A. Current Use: Agricultural _____ Industrial _____ Undeveloped _____

Commercial X Other _____

B. Site Name Exxon Service Station #3-2558

Street Address 936 Route 202 Southbound

_____ Zip Code 08876

Municipality Branchburg County Somerset

Tax Block and Lot Number(s) Block 42 Lot 8

Latitude 40° 34' 7" N Longitude 74° 41' 0" W

Acreage 1.43 acres

Geographic Boundaries Route 202 (south) and River Road (west and northwest)

EPA ID # (if applicable) _____

C. **Who will be executing this Agreement?** (if different than Question B)

Name John Hannig, Project Manager

Affiliation ExxonMobil Corporation

Address 1900 East Linden Avenue, Building 14, P.O. Box 730

City Linden State New Jersey Zip Code 07036

State of Incorporation _____ Corp. Status _____

Telephone # 908-474-6637

D. Select which phase(s) of the cleanup process are to be performed and what document(s) are to be submitted pursuant to the Agreement being requested.

	REMEDIAL PHASE*		DOCUMENTS TO BE SUBMITTED
[ ]	Preliminary Assessment	[ ]	Preliminary Assessment Report
[ ]	Site Investigation	[ ]	Site Investigation Report
[X]	Remedial Investigation	[ ]	Remedial Investigation Workplan
[ ]	Remedial Action	[X]	Remedial Investigation Report
		[ ]	Remedial Action Selection Report
* see attached Scope of Work		[ ]	Remedial Action Workplan
		[ ]	Remedial Action Report
		[X]	Request for Site Closure

E. **Current Site Owner(s)**

Name(s) _____

Firm ExxonMobil Corporation Telephone # _____

Street Address 1900 East Linden Avenue, Building 14

Municipality Linden

State New Jersey Zip Code 07036

F. **Current Business Operator(s)**

Name(s) _____

Firm ExxonMobil Corporation

Telephone # _____ Street Address 1900 East Linden Avenue

Municipality Linden State New Jersey Zip Code 07036

G. **Current Business Owner(s)** (if different than question Part E. or F.)

Name(s)_____

Firm _____ Telephone # _____

Street Address _____

Municipality _____

State _____ Zip Code _____

H. Provide the information requested below on the previous owners of the site and the entities who operated at the site.

Name	Owner or Operator	From	To
E.D. Van DerVeer	Owner	Unknown	1951
Mary E. Beldon	Owner	1951	1954
Bryant W. Griffin	Owner	1954	1956
Logan B. Steele	Owner	1954	1956
Calloway Corporation	Owner	1956	1956
Ellis & Lillian Charlott	Owner	1956	1960
ExxonMobil Corporation	Owner	1960	Present

(a.k.a. Esso Standard Oil Company, Humble Oil & Refining Company, and Exxon Corporation)

I. For those former Owner(s) and/or Operator(s)identified above (in paragraph H), give a brief discussion of all operations at the site, including but not limited to types of operations, materials used, waste generated, and waste disposal techniques.

The property was part of the Van DerVeer farm until 1951 but it is unknown if farming activities took place on this particular parcel. The operations at the site between 1951 and 1960 are unknown. From 1960 to present, the property operated as an active gasoline service station.

J. Are there currently or have there ever been any notices on the deed which constitute a Declaration of Environmental Restriction (DER) pursuant to N.J.A.C. 7:26E-1 et seq.?

Yes ____ No X Unknown ____

If yes, please state the name of the site as it was identified in the DER, the address, lot and block and EP ID number (if applicable) associated with the site.

_____

_____

_____

K. Are there currently, or have there ever been any hazardous substances as defined by N.J.A.C. 7:1E-1 et seq., used, treated, stored, disposed or discharged at the site (ie. fuel oil, gasoline)?

Yes X No _____

L. Are there currently, or have there ever been any hazardous wastes as defined by N.J.A.C. 7:26G-16 et seq., used, generated, treated, stored, disposed or discharged at the site?

Yes X No ____ Unknown _____

M. Are there currently, or have there ever been, any above or below ground storage tanks at the site?

Yes X No ____ Unknown ____

N. Did the discharge impact groundwater?

Yes _____ No X Unknown _____

O. What are the current operations at the site?

Retail gasoline service station.

P. What are the intended future uses of the site?

Continued operation as a retail gasoline service station.

Q. Describe briefly the major types of contaminants found at the site and what media they affect.

Unknown - to be determined through the proposed remedial Investigation as outlined on the attached Scope of Work.

R. Describe in detail how the contamination came to exist at the site. For example, were there past spills, landfill operations, industrial septic systems, USTs, deposition of fill material, etc.?

The NJDEP correspondence dated July 10, 2003 identified four Areas of Concern (AOCs) as potential sources of regional groundwater contamination .

1) A former septic system identified on a site plan provided by the NJDEP in July 2003 to the northeast of the station building.
2) An abandoned floor drain system in the service bays.
3) An area of "contaminated soil", believed to be an area where stockpiled soil had previously been stored.
4) An AOC surrounding a former waste oil UST.
5) Groundwater in the area of former monitoring well MW5 (all wells were abandoned in 2000).

S. List any civil/criminal actions taken against the owner/operator, managers or officials associated with the site for violations of any environmental laws or statutes.

Check here if no violations or alleged violation [X]

Date of action _____

Section of law or statute violated _____

Type of enforcement action _____

Description of the violation _____

_____

How was the violation or alleged violation resolved?

_____

_____

T. List all permits currently held by the applicant for the site. (NJPDES, RCRA, etc.)

UST Registration number 0086727

U. Has a Hazardous Discharge Site Remediation Fund Grant or Loan Application been filed with the Department?

Yes ____ No x

V. Has a loan/grant application pursuant to the Underground Storage Tank Finance Act been filed with the Department?

Yes ____ No x

W. Is the site located in a Neighborhood Empowerment Zone as defined in P.L.1996,c.62 (New Jersey Urban Redevelopment Act) ?

Yes ____ No x Unknown _____

X. Who will be the contact for all matters of this application?

Name John Hannig Title Project Manager

Affiliation ExxonMobil Corporation Phone 908-474-6637

Address 1900 East Linden Avenue, Building 14

City/Town Linden State NJ Zip Code 07036

Y. Is the site currently, or has it ever been, under the oversight of any other program within the Department of Environmental Protection?

Yes X No ____

If Yes, explain: Bureau of Underground Storage Tanks until November 17, 1999 when a No Further Action letter was issued for case number 92-12-28-1431-33-18.

Z. Do you consider this site to be a Brownfield as defined below:

Any former or current commercial or industrial site that is currently vacant or underutilized and on which there has been, or there is suspected to have been, a discharge of a contaminant.

OR

Is the remediation being conducted with the intent to pursue redevelopment?

Yes ____ No x

The following certification shall be signed by the highest-ranking individual with overall legal responsibility for implementing the remediation of a site, but shall not include contractors or consultants.

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively, or;
3. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.

A duly authorized representative of those persons described above may also sign the certification. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above;
2. The authorization specifies either an individual or a position having a responsibility for the overall operation of the site or activity, such as the position of plant manager, or a superintendent or person of equivalent responsibility (a duly authorized representative may thus be either a named individual or an individual occupying a named position);
3. The written authorization is submitted to the Department; and
4. If the authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this subsection shall be submitted to the Department prior to or together with any reports, information or applications to be signed by an authorized representative.

" I certify that I am fully aware of the requirements of N.J.A.C 7:26C-3, specifically as it pertains to the memorandum of agreement by rule. Further, I agree to pay the Department's oversight costs for the Department's review of any submissions pursuant to the memorandum of agreement until such time as I notify the Department that it is no longer feasible or desirable for me to continue with the memorandum of agreement."

SIGNATORY

Date: 4/16/04 BY: _____

Signature

J.E. HANNIG

Print Full Name Signed Above

Date: 4/16/04 BY: Joann Ramos

Notary Signature

JOANN RAMOS
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Feb. 22, 2009

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Date: _____ BY: _____

Vincent S. Krisak, Section Chief
DRPSR, Case Assignment Section

The Department will review the application and will respond in writing, within thirty calendar days from receipt of the application, as to whether the application is administratively complete or not. If the application is incomplete the deficiencies shall be listed. If the application is complete, the applicant will be deemed to have entered into an Agreement by rule pursuant to N.J.A.C. 7:26C-3.3.

Exxon Service Station #3-2558
936 Route 202
Branchburg, Somerset County, New Jersey
Scope of Work

Groundwater and Environmental Services, Inc. (GES) has been contracted by ExxonMobil Refining and Supply Company (ExxonMobil) to conduct environmental assessment activities at Exxon Service Station #3-2558 located at 936 Route 202, Branchburg, Somerset County, New Jersey. This assessment is being conducted in cooperation with the New Jersey Department of Environmental Protection (NJDEP) to evaluate the possible presence of a trichloroethene (TCE) source on the site. The work plan outlined below has been prepared based on the scope of work outlined in the NJDEP's September 15, 2003 correspondence.

This scope of work (SOW) consists of the drilling of four borings to between 120 and 160 feet below ground surface (bgs), the installation of FLUTe® blank well liners in each of the boreholes, the completion of geophysics at each boring location, installation of multi-level water sampling systems, groundwater sampling from each of the screened intervals, and subsequent reporting.

Drilling: Prior to the start of drilling activities, Mr. Mike Miller of the NJDEP's Bureau of Water Allocation (BWA) will be contacted for approval to install open boreholes in the bedrock exceeding 25 feet.

Four borings, depicted as monitoring wells MW1D through MW4D on the Proposed Monitoring Well Location Map (Attachment A), will be drilled as six-inch in diameter open boreholes into bedrock utilizing the air rotary drilling method. Borings MW1D, MW2D, and MW4D will be drilled to approximately 120 feet bgs and boring MW3D will be drilled to approximately 160 feet bgs. Boring MW3D (to be completed approximately ten feet north of former monitoring well MW5) will be drilled last in order to minimize the time available for cross-contamination prior to liner installation.

Development: Subsequent to completion, each boring will be developed utilizing a submersible pump. A practical effort will be made to develop each borehole to clarity prior to geophysical logging. Development water will be pumped directly to a tank truck and disposed of properly off-site. Waste manifests for the disposal of the development water will be submitted to the NJDEP.

Geophysics: Following development, geophysical logging will be completed at each borehole prior to the installation of the well liner (detailed in the following section). The logging activities must be performed prior to the installation of the liner as the liner may prevent accurate logging of the borehole/borehole fluid characteristics. For example, caliper logging to determine the diameter of the borehole, fluid temperature and electrical conductance/resistivity logging to measure the physical properties of the water within the

borehole, and the identification of fractures where in-flow/out-flow of groundwater occurs via a Heat-Pulse flowmeter would be ineffective if performed after liner installation.

In addition to the techniques listed above, logging of the geophysical properties of the geological formation via gamma radiation and electrical conductance/resistivity and video logging of the borehole walls will be completed.

Caliper logging and logging of the physical properties of the geologic formation and fluid within the boreholes will provide results compatible with the Mount Sopris system. The optical televiewer, utilized to obtain structural data for characterizing the bedrock formation, will provide results compatible with the Robertson Geologging system. Following completion of the geophysical logging, results will be submitted to the NJDEP and will be in electronic format where possible.

Blank Liner Installation: Following completion of the geophysical logging activities, FLUTe® blank well liners will be installed in each borehole. The blank well liners will serve to temporarily seal the borehole and prevent cross-contamination prior to final well construction. The liners will be installed throughout the entire length of the boreholes and will be housed in a sub-grade vault.

A flush mount manhole will be utilized as the liner vault. As per the FLUTe® specifications, the vault diameter will be a minimum of six inches greater than the borehole casing, the casing will extend a minimum of four inches above the vault floor, and the clearance from the top of the casing to the underside of the manhole lid will be a minimum of eight inches.

Multi-Level Well Installation: Following analysis of the geophysical data, the final well construction specifications for each borehole will be determined and proposed multi-level monitoring system specifications will be submitted to the NJDEP. If ExxonMobil intends to utilize FLUTe® multi-port monitoring systems, Mr. Mike Miller of the NJDEP BWA will be contacted for approval. Once approved, the proposed multi-level monitoring systems will be installed in each borehole to monitor the water-bearing zones identified during the geophysical logging.

Groundwater Sampling: Following installation of the multi-level monitoring systems, groundwater samples will be collected from each of the monitored zones within boreholes MW1D through MW4D. The groundwater samples will be submitted for laboratory analysis for volatile organic compounds (VOCs), including methyl *tertiary*-butyl ether (MTBE) and *tertiary*-butyl alcohol (TBA), plus a library search via USEPA approved test method 624+10.

Upon receipt from the analytical laboratory, a copy of the groundwater analytical results package, including quality control information, will be submitted to the NJDEP. This

data will be submitted to the NJDEP as soon as it is available to ExxonMobil and prior to the submission of the *Site Investigation Report* (SIR). Included with the SIR submission will be a diskette with a HazSite compliant Electronic Data Submission.

Schedule: It is anticipated that the initial phase of field work (boring installation, borehole development, geophysical investigation, and blank well liner installation) will take eight to ten working days to complete. The first day will be used for vacuum-assisted hand-clearing of the boring locations. The following days will be spent driving steel casing and drilling the boreholes. Subsequent to completion of the borings, well development will be completed. Purge water from well development will be loaded into a tanker truck for off-site disposal. It is anticipated that drilling activities and borehole development will be completed in five to six working days. Once development has been deemed sufficient, down-hole geophysics will be conducted.

Geophysical analysis of each borehole will consist of measurements via three-arm caliper, fluid temperature, electrical resistivity/conductance, optical televiewer, high-resolution acoustic televiewer, and heat pulse flowmeter methods. It is anticipated that geophysical logging will be completed in one to two working days. Upon completion of the geophysical investigation, each boring will be sealed using a FLUTe® blank well liner to prevent cross-contamination. Liner installation will be completed in one to two working days.

It is anticipated that it will take two to four weeks to adequately analyze data collected from the geophysical investigation. Upon completion of analysis, well completion details (screen interval(s) and depth(s)) will be determined. At a minimum, a screened interval will exist somewhere between 41 and 61 feet bgs in MW3D to investigate a historic TCE groundwater sample result in that location. Once finalized, multi-level monitoring system construction details will be submitted to the NJDEP for review. Upon NJDEP approval, the selected multi-level well technology will be installed.

Following installation, a minimum of two weeks will be allowed for the multi-level monitoring systems to stabilize and equilibrate with the aquifer. Subsequently, groundwater samples from each screened interval of each borehole will be collected. Groundwater samples will be submitted for laboratory analysis for VOCs, including MTBE and TBA, plus a library search.

Once this SOW is approved by the NJDEP, it will be submitted as an attachment to a Memorandum of Agreement (MOA) application. If the MOA is accepted and approved by the NJDEP without any major changes by April 16, 2004, the following schedule is proposed:

Activity	***Proposed Date(s)***
Borehole hand-clearing	*5/10/04*
Borehole drilling	*5/11/04 - 5/17/04*
Borehole development	*5/18/04*
Geophysical investigation	*5/19/04 - 5/20/04*
FLUTe® blank well liner installation	*5/21/04*
Analysis of geophysical investigation	*5/24/04 - 6/28/04*
Submittal of well specifications to NJDEP	*7/2/04*
Multi-level monitoring system installation	*8/9/04 - 8/11/04*
Groundwater sampling	*8/26/04*
Submittal of analytical data to NJDEP	*9/14/04*
SIR submittal to NJDEP	*10/31/04*

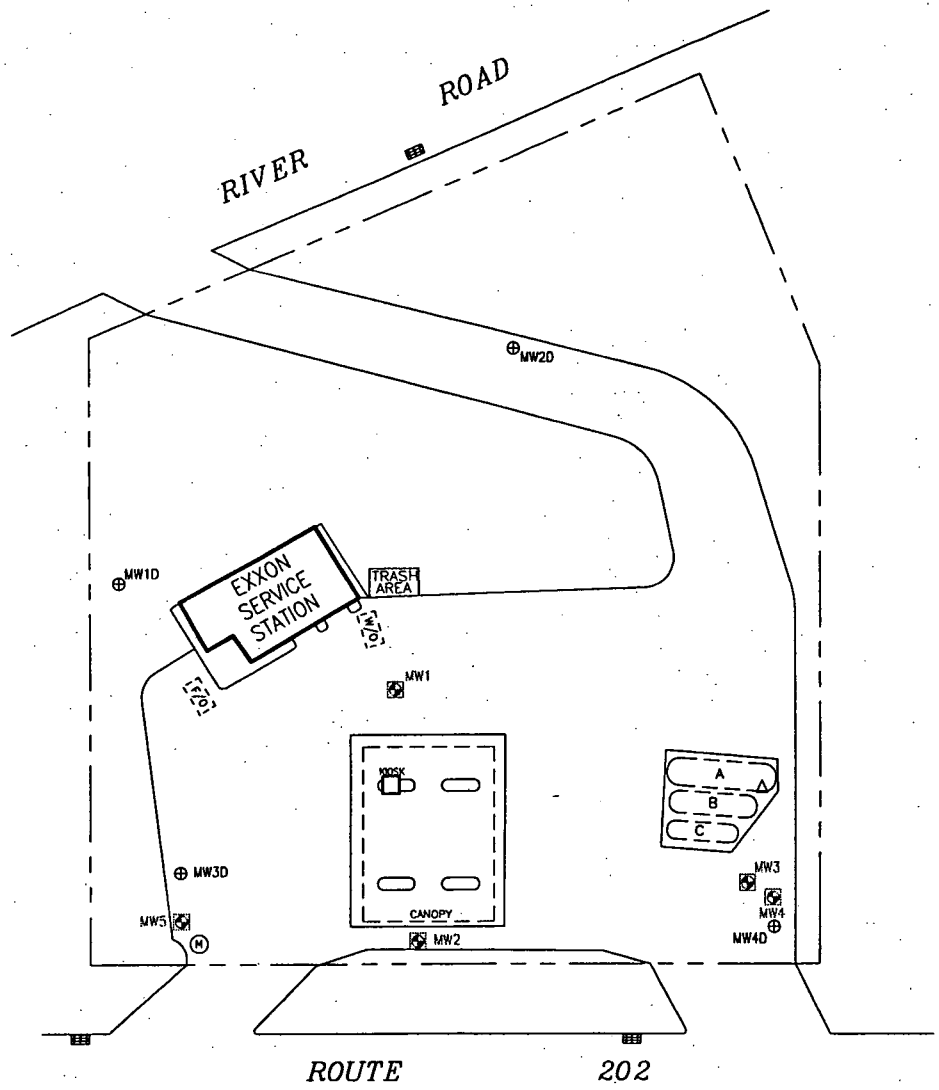
Reporting: A SIR will be submitted to the NJDEP following completion of the investigation. The SIR will detail the field activities outlined by this SOW, provide waste disposal/classification information for soil and groundwater generated during the investigation, and include a diskette with a HazSite compliant Electronic Data Submission. A tentative submittal date of September 30, 2004 is proposed at this time.

Assumptions: This SOW was prepared under the assumption that ExxonMobil will receive approval from the NJDEP's BWA to install open boreholes in bedrock that exceed the 25 foot limit established by N.J.A.C. 7:9D et. seq. and to utilize the FLUTe® blank well liners to temporarily seal the boreholes, and the FLUTe® multi-port monitoring systems to monitor and sample the selected zones. Should either of these items not be approved by the BWA, additional work will be required and schedule delays will be encountered.

In addition, please be advised that delays beyond the control of ExxonMobil and/or GES (i.e. weather, etc.) may be encountered which may cause changes to the schedule proposed herein.

ATTACHMENT A

Proposed Monitoring Well Location Map



LEGEND

- W/O — FORMER 1,000 GAL WASTE OIL TANK
- F/O — 1,000 GAL FUEL OIL TANK
- A — 12,000 GAL GASOLINE TANK
- B — 10,000 GAL GASOLINE TANK
- C — 8,000 GAL GASOLINE TANK
- STORM SEWER INLET
- M — UTILITY MANHOLE
- DISPENSER ISLAND
- △ — BENCH MARK P.K. NAIL EL = 100.00 ft (ASSUMED)
- ABANDONED MONITORING WELL
- ⊕ — PROPOSED MONITORING WELL

DRAFTED BY: T.M. (N.J.)	PROPOSED MONITORING WELL LOCATION MAP
CHECKED BY:	EXXON SERVICE STATION #3-2558 936 ROUTE 202 SOUTHBOUND BRANCHBURG, NEW JERSEY
REVIEWED BY:	Groundwater & Environmental Services, Inc. 1340 CAMPUS PARKWAY, NEPTUNE, NJ 07753
NORTH	SCALE IN FEET: 0 — 40 / DATE: 2-24-04 / FIGURE

359

M:\Graphics\3300-Wall\Exxon\3-2558 branchburg\3-2558 branchburg SM.dwg, 02/24/2004 09:14:39 AM, TMichaelidis, Tabloid, 1:40, GES

ATTACHMENT TT

RECORD OF COMMUNICATION

TO: FRANK SORCE

FROM: JOHN BULICH
Region 2, ESAT/RSCC

DATE: MAY 7, 2004

SUBJECT: QUALITY ASSURED DATA

MESSAGE:

PLEASE SIGN BELOW IN ACKNOWLEDGEMENT OF RECEIPT OF THE FOLLOWING AND RETURN **ONE** COPY OF THIS RECORD OF COMMUNICATION TO THE RSCC - REGION II.

EXXON SERVICE STATION #32558, CASE #32715, A4 ORG.
9 WATER/8 SOIL, TCL-VOA

REPLY BY: _____

SIGNATURE: _____ DATE: _____

DATE RECEIVED BY RSCC: _____

REV: 1/5/00

RECORD OF COMMUNICATION

TO: FRANK SORCE

FROM: JOHN BULICH
Region 2, ESAT/RSCC

DATE: MAY 7, 2004

SUBJECT: QUALITY ASSURED DATA

MESSAGE:

PLEASE SIGN BELOW IN ACKNOWLEDGEMENT OF RECEIPT OF THE FOLLOWING AND RETURN **ONE** COPY OF THIS RECORD OF COMMUNICATION TO THE RSCC - REGION II.

EXXON SERVICE STATION #32558, CASE #32715, A4 ORG.
9 WATER/8 SOIL, TCL-VOA

REPLY BY: _____

SIGNATURE: _____ DATE: _____

DATE RECEIVED BY RSCC: _____

REV: 1/5/00

EPA [redacted] Organic Traffic Report & Chain of Custody Record

Case No: [redacted] 52745 [redacted] R

DAS No:

Region:	2	Date Shipped:	4/1/2004
Project Code:		Carrier Name:	FedEx
Account Code:		Airbill:	840835652977
CERCLIS ID:	NJD986607752	Shipped to:	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277
Spill ID:	ZZ		
Site Name/State:	Exxon Service Station #32558/NJ		
Project Leader:	Nick Sodano		
Action:	Expanded Site Investigation/RI		
Sampling Co:	NJDEP		

Chain of Custody Record

Relinquished By (Date / Time)	Received By (Date / Time)
1 Nick Sodano 4/1/04 1600	
2	
3	
4	

Sampler Signature: Nick Sodano

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
B1BF9	Field QC/ Nick Sodano	M/G	VOA (21)	(HCL) (3)	TB	S: 4/1/2004	9:00		Trip Blank
B1BG0	Sediment/ Nick Sodano	M/G	VOC Soil (21)	(Ice Only) (10)	SED1	S: 4/1/2004	10:30		--
B1BG1	Sediment/ Nick Sodano	M/G	VOC Soil (21)	(Ice Only) (4)	SED2	S: 4/1/2004	10:55		--
B1BG2	Sediment/ Nick Sodano	M/G	VOC Soil (21)	(Ice Only) (4)	SED3	S: 4/1/2004	12:15		--
B1BG3	Surface Water/ Nick Sodano	M/G	VOA (21)	(HCL) (9)	SW1	S: 4/1/2004	9:55		--
B1BG4	Surface Water/ Nick Sodano	M/G	VOA (21)	(HCL) (3)	SW2	S: 4/1/2004	10:47		--
B1BG5	Surface Water/ Nick Sodano	M/G	VOA (21)	(HCL) (3)	SW3	S: 4/1/2004	11:51		--
B1BG6	Sediment/ Nick Sodano	M/G	VOC Soil (21)	(Ice Only) (4)	SED8	S: 4/1/2004	8:00		Field Duplicate
B1BG7	Surface Water/ Nick Sodano	M/G	VOA (21)	(HCL) (3)	SW8	S: 4/1/2004	8:00		Field Duplicate
B1BG8	Sediment/ Nick Sodano	M/G	VOC Soil (21)	(Ice Only) (4)	SED4	S: 4/1/2004	11:20		--
B1BG9	Sediment/ Nick Sodano	M/G	VOC Soil (21)	(Ice Only) (4)	SED5	S: 4/1/2004	13:55		--

363

Shipment for Case Complete? (Y)	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Yes	SW1, SED1 (B1BG3, B1BG0)	STEVE HOKE	NS01
Analysis Key:	**Concentration:** L = Low, (M = Low/Medium) H = High	**Type/Designate:** Composite = C, (Grab = G)	**Shipment Iced?** Y
VOA = CLP TCL Volatiles, VOC Soil = CLP TCL Volatiles Soil			

TR Number: 2-261120683-040104-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

EPA [redacted] Organic Traffic Report & Chain of Custody Record

Case No: [redacted] 32715 [redacted] R

DAS No:

Region:	2
Project Code:	
Account Code:	
CERCLIS ID:	NJD986607752
Spill ID:	ZZ
Site Name/State:	Exxon Service Station #32558/NJ
Project Leader:	Nick Sodano
Action:	Expanded Site Investigation/RI
Sampling Co:	NJDEP

Date Shipped:	4/1/2004
Carrier Name:	FedEx
Airbill:	840835652977
Shipped to:	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277

Chain of Custody Record

	Relinquished By (Date / Time)	Received By (Date / Time)
1	Nick Sodano 4/1/04 1600	
2		
3		
4		

Sampler Signature: Nick Sodano

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
B1BH0	Sediment/ Nick Sodano	M/G	VOC Soil (21)	(Ice Only) (4)	SED6	S: 4/1/2004	14:30		--
B1BH1	Sediment/ Nick Sodano	M/G	VOC Soil (21)	(Ice Only) (4)	SED7	S: 4/1/2004	14:55		--
B1BH2	Surface Water/ Nick Sodano	M/G	VOA (21)	(HCL) (3)	SW4	S: 4/1/2004	11:10		--
B1BH3	Surface Water/ Nick Sodano	M/G	VOA (21)	(HCL) (3)	SW5	S: 4/1/2004	13:45		--
B1BH4	Surface Water/ Nick Sodano	M/G	VOA (21)	(HCL) (3)	SW6	S: 4/1/2004	14:20		--
B1BH5	Surface Water/ Nick Sodano	M/G	VOA (21)	(HCL) (3)	SW7	S: 4/1/2004	14:45		--

364

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Yes	B1BG3, B1BG0 (SW1, SED1)	STEVE HOKE	NSØ1
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** Y

VOA = CLP TCL Volatiles, VOC Soil = CLP TCL Volatiles Soil

TR Number: 2-261120683-040104-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

RECORD OF COMMUNICATION

REGIONAL SAMPLE CONTROL CENTER

DATE: 4/21/2004
SUBJECT: CLP Data Package for Quality Assurance Review
FROM: Hazardous Waste Support Section
TO: ESAT/RSCC

Attached is the following ORGANIC Data Package to be reviewed for Quality Assurance

SITE: Exxon Service Station #32558 CASE #: 32715

SAMPLER: NJDEP SDG#: B1BF9 & B1BG0

PROJ. CODE: SI SITE SPILL #: ZZ

LAB: A4

TURN-AROUND-TIME: 21 day

CERCLIS ID #: NJD986607752

#SAMPLES	MATRIX
9	Water
8	Soil

FRACTION: TCL-VOA

Contaminant(s) of Concern (If known)

REGION II RSCC DATA TRANSFER LOG

Relinquished By		Received By	
Signature	Date/Time	Signature	Date/Time
Robert L. Rall	4/23/04	John Bulich	4-23-04
John Bulich B1BF9	4/29/04	Hubert Ahn B1BF9	4/29/04
Hubert Ahn B1BF9	5/6/04 SA	John Bulich B1BF9	5/6/04
John Bulich B1BG0	4/29/04	H. Hoffman B1BG0	4/29/04
H. Hoffman B1BG0	5/6/04	John Bulich All SDGs	5/6/04
John Bulich All SDGs	5/6/04	Robert L. Rall	5/6/04
Robert L. Rall	5/6/04	Hanif Sheikh	5/6/04
Hanif Sheikh	5/6/04	D Carras	5/6/04
D Carras	5/6/04	Hanif Sheikh	5/6/04
Hanif Sheikh	5/6/04	Robert L. Rall	5/6/04
Robert L. Rall	5/7/04	John Bulich	5/07/04

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 32715 SDG No.: B1BF9
LABORATORY: A4 SITE: Exxon Service Station

DATA ASSESSMENT

The current SOP HW-13 (Revision 3) July 2001, USEPA Region II Data Validation SOP for Statement of Work OLCO 3.2 for evaluating organic data have been applied.

All data are valid and acceptable except those analytes rejected "R"(unusable). Due to the detection of QC problems, some analytes may have the "J" (estimated), "N"(presumptive evidence for the presence of the material); "U" (non-detect) or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: Shobitha Amin Date: May 4, 2004

Verified By: [signature] Date: 5/6/04

CLP DATA ASSESSMENT

SDG # B1BF9

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.
No problems.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.
No problems.

3. MATRIX SPIKE/ MATRIX SPIKE RECOVERY:

The MS/MSDdata is generated to determine the long term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.
No problems.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:
Method blank contamination has not been used to qualify samples (No hits in the samples).

B) Field or rinse blank contamination:
Not applicable.

C) Trip blank contamination:
No contamination in the trip blank.

CLP DATA ASSESSMENT

D) Storage Blank:
No contamination in the Storage blank.

E) Tics "R" rejected:
None.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".
No problems.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be $\geq$ 0.05 in both initial and continuing calibrations. A value < 0.05and < 0.01 in the poor performers, indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected "R".

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and <50% for the poor performers. %D must be < 30% and <50% for the poor performers.. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

CLP DATA ASSESSMENT

DC-8 The following volatile samples are associated with a continuing percent difference (%D) outside primary criteria. Hits are qualified "J" and non-detects are qualified "UJ".

1,1,2-Trichloro-1,2,2-trifluoroethane
B1BF9, B1BG3, B1BG3MS, B1BG3MSD, B1BG4, B1BG5, B1BG7, B1BH2, B1BH3, B1BH4, B1BH5, VBLK96, VHBLK01

Carbon Disulfide
B1BF9, B1BG3, B1BG3MS, B1BG3MSD, B1BG4, B1BG5, B1BG7, B1BH2, B1BH3, B1BH4, B1BH5, VBLK96, VHBLK01

Chloroform
B1BF9, B1BG3, B1BG3MS, B1BG3MSD, B1BG4, B1BG5, B1BG7, B1BH2, B1BH3, B1BH4, B1BH5, VBLK96, VHBLK01

2-Hexanone
B1BF9, B1BG3, B1BG3MS, B1BG3MSD, B1BG4, B1BG5, B1BG7, B1BH2, B1BH3, B1BH4, B1BH5, VBLK96, VHBLK01

7. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count for Volatiles must not vary by more than ± 40%, and the internal standard area counts for Semivolatiles must not vary by more than ± 50%(-50% to +100%) from the associated continuing calibration standard area. The retention time of the internal standard must not vary more than ± 20 seconds from the associated continuing calibration standard. If the area count for Volatiles is greater the 40% range, or greater than +100% for Semivolatiles, of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated "J", and all non-detects are not flagged. If the area count for Volatiles is less than the 40% range, or if the area count for Semivolatiles is less than the 50% range of the associated standard, all of the positive results for compounds quantitated with that IS are qualified as estimated "J", and all non-detects are qualified as unusable "R".

If an internal standard retention time varies by more than 20 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction.
No problems.

8. COMPOUND IDENTIFICATION:

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match

CLP DATA ASSESSMENT

accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.
No problems.

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.
Not applicable.

9. CONTRACT PROBLEMS NON-COMPLIANCE:

10. FIELD DOCUMENTATION:

11. OTHER PROBLEMS:

12. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified to be used.

YES NO N/A

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 32715 LABORATORY: A4.

SITE NAME: EXXON SERVICE STATION SDG Number(s): B1BF9.

1.0 Chain of Custody and Sampling Trip Reports

1.1 Are the Traffic Reports/Chain-of-Custody Records present for all samples? [✓] ___ ___

ACTION: If no, contact RSCC, or contact the TOPO to obtain replacement of missing or illegible copies from the lab.

1.2 Is the Sampling Trip Report present for all samples and all fractions? [✓] ___ ___

ACTION: If no, contact either RSCC or ask the TOPO to obtain this information from the prime contractor.

2.0 Data Completeness and Deliverables

2.1 Have any missing deliverables been received and added to the data package? ___ ✓

NOTE: The lab is required to submit data for only two analyses, for each fraction. (i.e., the original sample and one dilution, or the most concentrated dilution analyzed and one further dilution.)

ACTION: Contact the TOPO to obtain an explanation or resubmittal of any missing deliverables from the lab. If lab cannot provide them, note the effect on the review of the package in the Contract Problems/Non-compliance section of the Data Assessment.

2.2 Was CLASS CCS checklist included with package? [✓] ___ ___

	YES	NO	N/A
2.3 Are there any discrepancies between the Traffic Reports/Chain-of-Custody Records, Sampling Report and Sample Tags?		[✓]	

ACTION: If yes, contact the TOPO to obtain an explanation or resubmittal of any missing deliverables from the laboratory.

3.0 Cover Letter SDG Narrative

3.1 Is the Narrative or Cover Letter Present?	[✓]		
3.2 Are case number, SDG number and contract number contained in the SDG Narrative or cover letter (see SOW, Exhibit B, section 2.6.1)? EPA sample numbers in the SDG, detailed documentation of any quality control, sample, shipment, and/or analytical problems encountered in processing the samples? Corrective action taken?	[✓]		
3.3 Does the narrative contain the following information:			
VOA: description of trap and columns used for sample analyses?	[✓]		
VOA: a NOTE stating whether Volatile low level soil samples prepared according to the modified SW-846 Method 5035? (p. B-9/VOA, sec 2.6.1)	[ ]		✓
VOA: any discrepancies between low level soil weights determined in the field and in the Laboratory? (p. B-10/VOA, sec. 2.6.1)		[ ]	✓
BNA: description of columns used for sample analyses?	[ ]		✓
Pest: description of columns used for sample analyses?	[ ]		✓

NOTE: As per section 6.23.3.1 SOW/p. D-11/Pest,

		YES	NO	N/A
	Packed columns are not permitted.			
3.4	Does the narrative, VOA and BNA sections, contain a list of all TIC's identified as alkanes and their estimated concentrations?	[ ]	✓	✓
3.5	Is the temperature indicator bottle present in the cooler? If not, did the Laboratory document in the SDG Narrative the alternative technique used to determine the cooler temperature? (Exhibit A/ p. A-5 sec. 4.2.1.2.3.3) ★ NOT DOCUMENTED	[ ]	★✓	___
3.6	Does the narrative contain a record of all cooler temperatures? If the temperature of a cooler was exceeded, > 10° C, the lab must list by fraction and sample number, all affected samples.	[✓]	___	___
3.7	Does the Narrative contain a list of sample reanalyses submitted? Did the Lab distinguish whether the reanalysis is billable, and if so why?	[✓]	___	✓
3.8	Does the narrative contain a list of the pH values determined for each water sample submitted for volatile analysis (SOW Exhibit B, section 2.6.1.2)?	[✓]	___	___
3.9	Does the Case Narrative contain the statement, "verbatim", as required in Section B of the SOW?	[✓]	___	___

ACTION: If "No", to any question in this section, contact the TOPO to obtain all necessary resubmittals. If information is not available, document in the Data Assessment under Contract Problems/Non-Compliance section.

4.0 Data Validation Checklist

4.1	Check the package for the following discrepancies:			
	a. Is the package paginated in ascending order starting from the SDG narrative?	[✓]	___	___

	YES	NO	N/A
b. Are all forms and copies legible?	1/1	___	___
c. Is each fraction assembled in the order set forth in the SOW?	1/1	___	___

The following checklist is divided into three parts. Part A is for any VOA analyses, Part B is for BNA's and Part C is Pesticide/PCB's.

Does this package contain:

VOA Data?	/	___	
BNA Data?	___	/	
Pesticide/PCB data?	___	/	

ACTION: Complete corresponding parts of checklist.

YES NO N/A

PART A: VOA ANALYSES

1.0 Sample Conditions/Problems

1.1 Do the Traffic Reports/Chain-of-Custody Records, Sampling Report or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data? ___ [✓] ___

ACTION: If any sample analyzed as a soil, other than TCLP, contains 50% - 90% water, all data shall be flagged as estimated (J). If a soil sample other than TCLP contains more than 90% water, then qualify positive results "J", and non-detects "R".

ACTION: If samples were not iced or the ice was melted upon arrival at the laboratory and the cooler temperature was elevated (> 10° C), then flag all positive results with a "J" and all non-detects "UJ".

ACTION: If both VOA vials for a sample have air bubbles or the VOA vial analyzed had air bubbles, flag all positive results "J" and all non-detects "R".

ACTION: The smallest soil size permitted is 0.5g. If any soil sample is smaller than 0.5g, document in the Data Assessment under Contract Problems/Non-Compliance.

2.0 Holding Times

2.1 Have any VOA technical holding times, determined from date of collection to date of analysis, been exceeded? ___ [✓] ___

Technical Holding Times for AQUEOUS AND SOIL NON-ENCORE SAMPLES: If unpreserved, aqueous samples, maintained at 4° C for aromatic hydrocarbons analysis must be analyzed within 7 days of collection. If

YES NO N/A

preserved with HCl (pH < 2) and stored at 4° C, then aqueous samples must be analyzed within 14 days of collection. If uncertain about preservation, contact sampler to determine whether or not samples were preserved. The holding time for non-Encore soils is 10 days from date of collection.

ACTION: If technical holding times for aqueous samples and soil non-Encore samples are exceeded, flag all positive results as estimated "J" and sample quantitation limits as estimated "UJ", and document in the Data Assessment that holding times were exceeded. If analyses were done more than 14 days beyond holding time, either on the first analysis or upon re-analysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of additional storage on the sample results. At a minimum, all results must be qualified "J", but the reviewer may determine that non-detect data are unusable "R". If holding times are exceeded by more than 28 days, all non detect data are unusable "R".

NOTE: Contractual Holding Times: Analysis of water and Non-Encore soil samples must be completed within 10 days of Validated Time of Sample Receipt (VTSR). This requirement does not apply to Performance Evaluation (PE) samples.

Technical Holding Times for soils Encore samples:

i) If sample was preserved ≤ 2 days of VTSR:

1. and analyzed ≤ 14 days from DoC, NO action needed.
2. and analyzed > 14 days from DoC, qualify positive results "J" and non-detects "UJ".
3. and analyzed > 28 days from DoC, qualify positive results "J" and non-detects "R".

ii) If sample was NOT preserved, or preserved > 2 days of VTSR

1. and analyzed ≤ 7 days from DoC, No action needed.

YES NO N/A

2. and analyzed > 7 days from DoC, qualify AROMATIC analytes only, both positive and non-detects, as estimated "J".
3. and analyzed > 10 days from DoC, qualify ALL positive analytes "J" and ALL non-detects as "UJ".
4. and analyzed ≥ 20 days from DoC, qualify positive results "J" and non-detects "R".

Note: ~~CONTRACT holding times for soil Encore samples are:~~

1. Samples must be preserved within two (2) days of VTSR and must be analyzed within ten (10) days of VTSR.

2. Samples NOT preserved within two (2) days of VTSR must be analyzed within two (2) days of VTSR.

ACTION: If contractual holding times are exceeded, document in the Data Assessment.

NOTE: The data reviewer must note in the Data Assessment <u>whether or not</u> technical and contractual holding times were met.

<u>Table of Holding Time Violations</u>

(See Chain-of-Custody Records)

Sample ID	Sample Matrix	Was Sample Preserved?	Date Sampled	Date Lab Received	Date Analyzed

	YES	NO	N/A
3.0 System Monitoring Compound (SMC) Recovery (Form II)			
3.1 Are the VOA SMC Recovery Summaries (Form II) present for each of the following matrices:			
a. Low Water?	[✓]		
b. Low Soil?	[ ]		✓
c. Med Soil?	[ ]		✓
3.2 Are all the VOA samples listed on the appropriate System Monitoring Compound Recovery Summary for each of the following matrices:			
a. Low Water?	[✓]		
b. Low Soil?	[ ]		✓
c. Med Soil?	[ ]		✓
ACTION: Contact the TOPO to obtain an explanation or resubmittal of any missing deliverables from the laboratory. If missing deliverables are unavailable, document the effect in the Data Assessment.			
3.3 Were outliers marked correctly with an asterisk?	[ ]		✓
ACTION: Circle all outliers with red pencil.			
3.4 Was one or more VOA system monitoring compound recovery outside of contract specifications for any sample or method blank?		[✓]	
If yes, were samples re-analyzed?	[ ]		✓
Were method blanks re-analyzed?	[ ]		✓
ACTION: If recoveries are ≥ 10%, but 1 or more compounds fail to meet SOW specifications:			

YES NO N/A

1. All positive results are qualified as estimated "J".

2. Flag all non-detects as estimated detection limits "UJ" where recovery is less than the lower acceptance limit.

3. If SMC recoveries are above allowable levels, qualify positive results "J" and do not qualify non-detects.

ACTION: If any system monitoring compound recovery is < 10%:

1. Flag all positive results as estimated "J".

2. Flag all non-detects as unusable "R".

Professional judgement should be used to qualify data that only have method blank SMC recoveries out of specification in both original and re-analyses. Check the internal standard areas.

NOTE: Contractual requirements state that if any SMC fails the acceptance criteria, the sample must be re-analyzed. If the affected sample was not re-analyzed, document in the Data Assessment under Contract Problems/Non-Compliance.

NOTE: The laboratory must submit the following data:

1. If SMC recoveries and internal standard responses meet the acceptance criteria in the re-analyzed sample, then the laboratory must submit only the re-analysis.

2. If an SMC recovery and/or internal standard response fails to meet the acceptance criteria upon re-analysis, then submit data from both analyses.

(Refer to section 11.4.3.2, page D-45/VOA of the

	YES	NO	N/A
SOW for more information.)			
3.5 Are there any transcription/calculation errors between raw data and Form II? AS PER CADRE AND CCS		[/]	

ACTION: If large errors exist, contact the TOPO to obtain an explanation or resubmittal of corrected deliverables from the laboratory. Make any necessary corrections and note the effect in the Data Assessment.

4.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present?	[/]		
4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:			
a. Low Water?	[/]		
b. Low Soil?	[ ]		/
c. Med Soil?	[ ]		/

ACTION: If any matrix spike data are missing, take the action specified in section 3.2 above.

ACTION: No action is taken based upon MS/MSD data alone. However, using informed professional judgement, the MS/MSD results may be used in conjunction with other QC criteria to determine the need for qualification of the data.

ACTION: Circle all outliers with red pencil.

5.0 Blanks (Form IV)

5.1 Is the Method Blank Summary (Form IV) present?	[/]		
5.2 Frequency of Analysis: for the analysis of VOA TCL compounds, has a reagent/method blank been analyzed during every 12-hour time period on each			

		YES	NO	N/A
	GC/MS system, before any samples, and for each matrix? (water, low soil or medium soil)	[✓]	___	___
5.3	Has a VOA method blank been analyzed at least once every twelve hours for each matrix/concentration and GC/MS system used?	[✓]	___	___
5.4	Was a VOA instrument blank analyzed after each sample/dilution which contained a target compound that exceeded the initial calibration range?	[ ]	___	✓
5.5	Was a VOA storage blank analyzed at the end of all samples for each SDG in a case?	[✓]	___	___

ACTION: If any method/instrument blank data are missing, contact the TOPO to obtain any missing deliverables from the laboratory. If method blank data are not available, reject "R" all associated positive data. However, using professional judgement, the data reviewer may substitute field blank or trip blank data for missing method blank data.

If the instrument blank was not analyzed after a sample with high concentration of reported values, inspect the chromatogram of the sample analyzed immediately after this analysis for possible carryover. Use professional judgement to determine if any contamination occurred and qualify analyte(s) accordingly.

If storage blank data is missing, contact the TOPO to obtain any missing deliverables from the laboratory. If unavailable, note in the Contract Problems/Non-Compliance section of the Data Assessment.

Note: A storage blank shall be analyzed and reported as a water sample unless the SDG contains only soil samples. Then, the storage blank may be analyzed and reported as a soil sample. (p. D-49/VOA sec. 12.1.3.5)

YES NO N/A

5.6 The validator should verify that the correct identification scheme for the EPA Blank samples were used. See page B-30, section 3.3.7.3 of the SOW for further information.

Was the correct identification scheme used for all VOA blanks? [/] ___ ___

ACTION: Contact the TOPO to obtain missing deliverables from the lab, or make the required corrections on the forms. Document in the Data Assessment under Contract Problems/Non-compliance if corrections were made by the validator.

5.7 Chromatography: review the blank raw data-chromatograms (RICs), quant. reports or data system printouts and spectra. Is the chromatographic performance (baseline stability) for each instrument acceptable for VOA's? [/] ___ ___

ACTION: Use professional judgement to determine the effect on the data.

5.8 Are all detected hits for target compounds in method, instrument and storage blanks less than the CRQL for that analyte? [/] ___ ___

Exception: Acetone and 2-butanone must be less than 5 times the CRQL, and methylene chloride and Cyclohexane must be less than 2.5 times its CRQL. (p. D-50/VOA sec. 12.1.4.6)

ACTION: If no, an explanation and laboratory's corrective actions must be addressed in the case narrative. If the narrative contains no explanation, then make a note in the Contract Problems/Non-Compliance section of the Data Assessment.

6.0 Contamination

NOTE: "Water blanks", "drill blanks", and "distilled water blanks" are validated like any other sample, and are not used to qualify data. Do not

YES NO N/A

confuse them with the other QC blanks discussed below.

6.1 Do any method/instrument/reagent/storage blanks have positive results (TCL and/or TIC) for VOA's? ✓ [ ]

NOTE: When applied as directed in the table below, the contaminant concentration in these blanks are multiplied by the sample dilution factor and corrected for %moisture when necessary.

NOTE: A contaminated instrument blank is not allowable under this SOW. The instrument blank must meet the technical acceptance criteria for blank analyses(sec. 12.1.4). See page D-48/VOA, section 12.1.2.4 for additional information. Document in the Data Assessment under Contract Problems/Non-Compliance if contaminated instrument blank was submitted.

6.2 Do any field/trip/rinse blanks have positive VOA results (TCL and/or TIC)? [✓]

ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)

NOTE: All field blank results associated with a particular group of samples (may exceed one per case) must be used to qualify data. Trip blanks are used to qualify only those samples with which they were shipped and are not required for non-aqueous matrices. Blanks may not be qualified because of contamination in another blank. Field Blanks & Trip Blanks must be qualified for system monitoring compound, instrument performance criteria, spectral or calibration, and Internal standard QC problems.

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks. If any blanks are grossly contaminated, all associated data should be

YES NO N/A

qualified as unusable "R".

NOTE: Analytes qualified "U" for blank contamination are till considered as "hits" when qualifying for calibration criteria.

ACTION: For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R".

For:	Flag sample result with a "U" when:	Report CRQL & qualify "U" when:	No qualification is needed when:
TCL COMPOUNDS			
Methylene Chloride Acetone Toluene 2-Butanone Cyclohexane	Sample conc. is > CRQL, but ≤ 10x blank value.	Sample conc. is < CRQL and ≤ 10x blank value.	Sample conc. is > CRQL and > 10x blank value.
Other Conta-minants	Sample conc. is > CRQL, but ≤ 5x blank value.	Sample conc. is < CRQL and ≤ 5x blank value.	Sample conc. is > CRQL and > 5x blank value.

6.3 Are there field/rinse/equipment blanks associated with every sample? [ ] J ___

ACTION: For low level samples, note in the Data Assessment that there is no associated field/rinse/equipment blank. For samples with high concentrations of suspected blank contaminants, use professional judgement to qualify these values and make a note in the Data Assessment.

Exception: samples taken from a drinking water tap do not have associated field blanks.

.0 GC/MS Instrument Performance Check (Form V)

	YES	NO	N/A
7.1 Are the GC/MS Instrument Performance Check Forms (Form V) present for Bromofluorobenzene (BFB)?	✓		
7.2 Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the BFB provided for each twelve hour shift?	✓		
7.3 Is the mass spectrum of BFB acquired according to sec. 9.2.4.1 D-23/VOA?	✓		

Note: Sec. 9.2.4.1 states that "the mass spectrum of BFB MUST be acquired in the following manner. Three scans (the peak apex scan and the scans immediately preceding and following the apex) are acquired and averaged. Background subtraction is required, and MUST be accomplished using a single scan no more than 20 scans prior to the elution of BFB. DO NOT background subtract part of the BFB peak." See Attachment 2 for BFB criteria.

Action: If not, reject "R" all samples associated with that particular BFB.

7.4 Has an instrument performance check been analyzed for every analytical sequence on each instrument?	✓		

ACTION: List date, time, instrument ID, and sample numbers for which associated GC/MS tuning data are unavailable.

DATE	TIME	INSTRUMENT	SAMPLE NUMBERS

ACTION: Notify the TOPO to obtain missing data, if possible. If the lab cannot provide the missing data, reject, "R", all data generated outside an acceptable twelve hour calibration interval.

	YES	NO	N/A
7.5 Have the ion abundances been normalized to m/z 95 as specified in Exhibit D, page D-56/VOA? AS PER CADRE AND CCS	[/]	___	___

NOTE: All ion abundance ratios must be normalized to m/z 95, the nominal base peak, even though the ion abundance of m/z 174 may be up to 120% that of m/z 95.

ACTION: If mass assignment is in error, qualify all associated data as unusable "R".

7.6 Have the ion abundance criteria been met for each instrument used? AS PER CADRE AND CCS	[/]	___	___

ACTION: List all data which do not meet ion abundance criteria (attach a separate sheet).

ACTION: If ion abundance criteria are not met, the Region II TPO must be notified.

7.7 Are there any transcription/calculation errors between mass lists and Form Vs? (Check at least two values, but if errors are found check more.) AS PER CADRE AND CCS	___	[/]	___
7.8 Is the number of significant figures for the reported relative abundances consistent with the number given for each ion in the ion abundance criteria column?	[/]	___	___

ACTION: If large errors exist, take action as specified in section 3.5 above.

7.9 Are the spectra of the mass calibration compound acceptable?	[/]	___	___

ACTION: Use professional judgement to determine whether associated data should be accepted, qualified, or rejected.

.0 Target Compound List (TCL) Analytes (FORM I VOA)

8.1 Are the Organic Analysis Data Sheets (Form I VOA) present with required header information on each page, for each of the following:			

	YES	NO	N/A
a. Samples and/or fractions as appropriate?	☑		
b. Matrix spikes and matrix spike duplicates?	☑		
c. Blanks?	☑		

8.2 Are the VOA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (quant. reports) included in the sample package for each of the following:

a. Samples and/or fractions as appropriate?	☑		
b. Matrix spikes and matrix spike duplicates (mass spectra not required)?	☑		
c. Blanks?	☑		

ACTION: If any data are missing, take action specified in 3.2 above.

8.3 Is chromatographic performance acceptable with respect to:

a. Baseline stability?	☑		
b. Resolution?	☐		
c. Peak shape?	☐		
d. Full-scale graph (attenuation)?	☐		
e. Other: _____?	☐		

ACTION: Use professional judgement to determine the acceptability of the data.

8.4 Are the lab-generated standard mass spectra of the identified VOA compounds present for each sample? AS PER CADRE AND CCS

	☑		

ACTION: If any mass spectra are missing, take action as specified in 3.2 above. If the lab does not

	YES	NO	N/A
generate its own standard spectra, document in the Contract Problems/Non-compliance section of the Data Assessment.			
8.5 Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration? AS PER CADRE AND CCS	[ ]		✓
8.6 Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum? AS PER CADRE AND CCS.	[ ]		✓
8.7 Do sample and standard relative ion intensities agree within ±20%? AS PER CADRE AND CCS.	[ ]		✓

ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected "R", flagged "N" (presumptive evidence of the presence of the compound) or changed to not detected "U" at the calculated detection limit. In order to be positively identified, the data must comply with the criteria listed in 8.5, 8.6, and 8.7.

ACTION: When sample carry-over is suspected, use professional judgement determine if instrument cross-contamination has affected positive compound identifications.

9.0 Tentatively Identified Compounds (TIC) NO HITS.

9.1 Are all Tentatively Identified Compound Forms (Form I Part B) present; and do listed TIC's include scan number or retention time, estimated concentration and "JN" qualifier?	[ ]		✓
9.2 Are the mass spectra for the TIC's and associated "best match" spectra included in the sample package for each of the following: AS PER CADRE AND CCS			
a. Samples and/or fractions as appropriate?	[ ]		✓
b. Blanks?	[ ]		✓

	YES	NO	N/A
c. Are Alkanes listed in/or part of the Case Narrative?	[ ]	___	✓

ACTION: If any TIC data are missing, take action specified in 3.2 above.

ACTION: Add "JN" qualifier to all chemically named TIC's, if missing.

9.3 Are any TCL compounds (from any fraction including all PCB congeners) listed as TIC compounds? (Example: 1,2- dimethylbenzene is xylene, a VOA TCL analyte, and should not be reported as a TIC.)	___	[ ]	✓

ACTION: Flag with "R" only TCL compound detected in another fraction. (Except blank contaminants)

9.4 Are any TIC's reported earlier than 30 sec before the first purgeable compound, or three (3) min. after the last purgeable compound listed in Exhibit C (Volatiles)? AS PER CADRE & CCS.	___	[ ]	✓

ACTION: Flag with "R" any TIC compound reported. (p. D38-VOA, sec. 11.1.2.2)

9.5 Are all ions present in the reference mass spectrum with a relative intensity greater than 10% also present in the sample mass spectrum? AS PER CADRE & CCS	[ ]	___	✓
9.6 Do TIC and "best match" standard relative ion intensities agree within ±20%? AS PER CADRE & CCS.	[ ]	___	✓

ACTION: Use professional judgement to determine the acceptability of TIC identifications. If it is determined an incorrect identification was made, change the identification to "unknown," or to some less specific identification as appropriate. (Example: "C3 substituted benzene.")

Also, when a compound is not found in any blank, but is detected in a sample and is a suspected artifact of a common laboratory

YES NO N/A

contaminant, the result should be qualified as unusable "R". (E.g., Common Lab Contaminants: CO_2 (M/E 44), Siloxanes (M/E 73) hexane, aldol condensation products, solvent preservatives, and related by-products.

9.7 Are TIC's with responses < 10% of the internal standard (as determined by inspection of the peak areas or height) reported? AS PER CADRE AND CCS ___ [ ] ✓

ACTION: If yes, cross out questionable TIC's.

10.0 **Compound Quantitation and Reported Detection Limits**

10.1 Are there any transcription/calculation errors in Form I results? (Check at least two positive values. Verify that the correct internal standards, quantitation ions, and RRF were used to calculate Form I results.) AS PER CADRE AND CCS ___ [✓] ___

10.2 Are the CRQL's adjusted to reflect sample dilutions and, for soils, sample moisture? AS PER CADRE AND CCS [ ] ___ ✓

ACTION: If errors are large, take action as specified in section 3.2 above.

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQL's are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample). Replace concentrations that exceeded the calibration range in the original analysis by crossing out the "E" and its corresponding value on the original Form I and substituting the data from the diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form Is not to be used, including any in the data summary package.

11.0 **Standards Data (GC/MS)**

11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (quant. reports) present for each initial and continuing calibration? [✓] ___ ___

YES NO N/A

ACTION: If any calibration standard data are missing, take action specified in 3.2 above.

12.0 GC/MS Initial Calibration (Form VI)

12.1 Are the Initial Calibration Forms (Form VI) present and complete at concentrations of 10, 20, 50, 100, 200ng for separate calibrations of low water/med soils (unheated purge) and low soils (heated purge)? [✓] ___ ___

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Were all low level soil standards, blanks and samples analyzed by heated purge? [✓] ___ ___

ACTION: If low level soil samples were not heated during purge, qualify positive hits "J" (estimated) and non-detects "R".

12.3 Are the % relative standard deviation (%RSD) values for VOA's ≤ 30% over the concentration range of the calibration? [✓] ___ ___

NOTE: Although 23 VOA compounds have a contractual minimum RRF and no maximum %RSD, the technical acceptance criteria are the same for all analytes.

ACTION: Circle all outliers with red pencil.

ACTION: If %RSD is > 30.0%, qualify associated positive results for that analyte "J" (estimated). Do not qualify non-detects. When %RSD is > 90%, flag all non-detects for that analyte "R" (unusable) and positive hits "J" .

NOTE: Analytes previously qualified "U" for blank contamination are still considered as "hits" when qualifying for initial calibration criteria.

12.4 Are any average RRFs < 0.05? ___ [✓] ___

YES NO N/A

ACTION: Circle all outliers with red pencil.

ACTION: If the average RRF is < 0.05, then qualify associated non-detects with an "R" and flag associated positive data as estimated "J".

NOTE: Contract Requirement: The SOW allows up to two of the required analytes to fail contractual %RSD or RRF criteria, provided the %RSD is ≤ 40% and RRF is ≥ 0.010. (See Table 5, page D-61/VOA and analytes marked with a "*" on Form VI for required analytes and contractual criteria.) Technical criteria, however, are the same for all analytes.

ACTION: If more than two analytes failed %RSD or RRF criteria, document in the Data Assessment under Contract Problems/Non-Compliance.

12.5 Are there any transcription/calculation errors in the reporting of average relative response factors (RRF) or %RSD? (Check at least 2 values, but if errors are found, check more.)
AS PER CADRE AND CLS — [/] —

ACTION: Circle errors with red pencil.

ACTION: If errors are large, contact the TOPO to obtain an explanation/resubmittal from the lab, document in the Data Assessment under Contract Problems/Non-Compliance.

13.0 GC/MS Continuing Calibration (Form VII)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for separate calibration of low water/med soil and low soil samples? [/] — —

13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument? [/] — —

ACTION: If any forms are missing or no continuing calibration standard has been analyzed within twelve hours of every sample analysis, contact

YES NO N/A

the TOPO to request an explanation/resubmittal from the lab. If continuing calibration data are not available, flag all associated sample data as unusable "R".

ACTION: List below all sample(s) that were not analyzed within twelve hours of the previous continuing calibration.

13.3 Do any volatile compounds have a percent difference (%D) between the initial and continuing RRF which exceeds the ±25% criteria? ✓ [ ] ___

NOTE: Although 23 VOA compounds have a contractual minimum RRF and no maximum %D, the technical acceptance criteria are the same for all analytes.

ACTION: Circle all outliers with red pencil.

ACTION: Qualify both positive results and non-detects for the outlier compound(s) as estimated. When %D is > 90%, qualify all non-detects for that analyte unusable (R) and positive results estimated (J).

13.4 Are any continuing calibration RRFs < 0.05? ___ ✓ ___

ACTION: Circle all outliers with red pencil.

ACTION: If the RRF is < 0.05, qualify the associated non-detects as unusable "R" and the associated positive values "J".

NOTE: Contract Requirement: The SOW allows up to two of the required analytes to fail contractual %D and RRF criteria, provided that the %D is ≤ 40% and the RRF is ≥ 0.010. (See Table 5 pg. D-61/VOA or

YES NO N/A

analytes marked with a "*" on Form VI for required analytes.) Technical criteria, however, are the same for all analytes.

ACTION: If more than two analytes failed %D and RRF, criteria document in the Data Assessment under contract Problems/Non-Compliance.

13.5 Are there any transcription/calculation errors in the reporting of RRF or %D between initial and continuing RRFs? (Check at least two values, but if errors are found, check more.) AS PER CADRE AND CCS REPORT. ___ [X] ___

ACTION: Circle errors with red pencil.

ACTION: If errors are large, contact the TOPO to obtain an explanation/resubmittal from the lab, document in the Data Assessment under Contract Problems/Non-Compliance.

14.0 Internal Standard (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits (-50% to +100%) for each continuing calibration? AS PER CADRE AND CCS. [/] ___ ___

If no, was the sample re-analyzed? [ ] ___ /

ACTION: 1. Circle all outliers with red pencil.

2. List all the outliers below.

Sample #	Internal Std.	Area	Lower/Upper Limit
			/
			/
			/

(Attach additional sheets if necessary, or attach copies of Form VIIIs.)

YES NO N/A

ACTION: If any sample was not re-analyzed, document in the Data Assessment under Contract Problems/Non-Compliance.

ACTION: 1. If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results quantitated with this internal standard.

2. Do not qualify non-detects when associated IS area counts are > 100%.

3. If the IS area in the sample is below the "lower limit," < 50%, qualify all analytes associated with that IS estimated, "J". If the area counts are extremely low, < 25% of the area in the 12 hour standard, or if performance exhibits a major abrupt drop- off, flag all associated non-detects as unusable, "R", and positive hits estimated, "J".

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? As per CADORE and CCS ☑ ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

NOTE: Contractual requirements state that if any internal standard fails the acceptance criteria, the sample must be re-analyzed. If the affected sample was not re-analyzed, document in the Data Assessment under Contract Problems/Non-Compliance.

15.0 Field Duplicates

15.1 Were any field duplicates submitted for VOA analysis? ☑ ___ ___

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

YES NO N/A

ACTION: Any gross variation between duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

A4 SCIENTIFIC, INC.

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Contract #: 68W03027	Case #: 32715	SDG #: B1BF9

SDG NARRATIVE

SAMPLE RECEIPT & LOGIN

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

EPA SAMPLE #	LAB SAMPLE #	DATE /TIME RECEIVED	AIRBILL NO.	VOA	BNA	PEST	REMARKS
B1BF9	4727.002	04/02/04 10:30	840835652977	X			
B1BG3	4727.003	04/02/04 10:30	840835652977	X			MS/MSD
B1BG4	4727.004	04/02/04 10:30	840835652977	X			
B1BG5	4727.005	04/02/04 10:30	840835652977	X			
B1BG7	4727.006	04/02/04 10:30	840835652977	X			
B1BH2	4727.007	04/02/04 10:30	840835652977	X			
B1BH3	4727.008	04/02/04 10:30	840835652977	X			
B1BH4	4727.009	04/02/04 10:30	840835652977	X			
B1BH5	4727.010	04/02/04 10:30	840835652977	X			

The cooler temperatures are listed against the coolers.

DATE RECEIVED	COOLER NO.	Temp (in °C)
04/02/04	1	2.5

Sample B1BH5 lab received 3 vials of which one vial was broken. SMO was notified. Resolution is enclosed. No other discrepancies or issues were noted during sample receipt and login.

VOLATILES

Samples were analyzed using instrument **A-5971**.

Instrument **A-5971** consisted of an HP 5971 GC/MS with a 25-meter long DB-624 (Agilent cat# 128-1324) column having a 0.2mm ID and 1.12µm film thickness, a ENCON Purge and Trap with an Archon autosampler. The trap used was a K trap (VOCARB 3000) having 10cm of Carbopack B, 6cm of Carboxen 1000, and 1cm Carboxen 1001.

All VOA samples had the pH characteristic verified. The reading is listed below.

EPA SAMPLE #	LAB SAMPLE #	pH
B1BF9	4727.002	≤2
B1BG3	4727.003	≤2
B1BG4	4727.004	≤2
B1BG5	4727.005	≤2
B1BG6	4727.006	≤2
B1BH2	4727.007	≤2
B1BH3	4727.008	≤2
B1BH4	4727.009	≤2
B1BH5	4727.010	≤2

Manual integrations were performed for the following samples for the compounds listed against them.

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Contract #: 68W03027	Case #: 32715	SDG #: B1BF9

SDG NARRATIVE

VSTD01072 – Methyl Acetate
VSTD02072 – Methyl Acetate
VSTD05072 – Methyl Acetate
VSTD10072 – Methyl Acetate
VSTD20072 – Methyl Acetate
VSTD05096 – Methyl Acetate

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

The following equations are used for calculation of sample results from raw instrument output data:

$$\text{Concentration } (\mu g/L) = \frac{(Ax)(Is)(Df)}{(Ais)(RRF)(Vo)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured.
A_{is} = Area of the characteristic ion (EICP) for the specific internal standard.
I_s = Amount of internal standard added in nanograms (ng).
RRF = Relative response factor from the ambient temperature purge of the calibration standard.
V_o = Volume of water purged, in milliliters (mL).
D*f* = Dilution factor.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package and in the computer readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature:

Sumana Reddy / QC Coordinator
Signature and Title

04/19/04
Date of Signature

RECEIVED
APR 20 2004
HAZ. WASTE SUPPORT SEC.

Sample Delivery Group(SDG) Cover Sheet

SDG Number: B1BF9

Laboratory Name.: A4 SCIENTIFIC, INC. **Laboratory Code.:** A4

Contract No.: 68W03027 **Case No.:** 32715

Analysis Price: **SDG Turnaround:** 21 days

EPA Sample Numbers in SDG(Listed in Numerical Order)

1)B1BF9	7)B1BH3	13)	19)
2)B1BG3	8)B1BH4	14)	20)
3)B1BG4	9)B1BH5	15)	21)
4)B1BG5	10)	16)	22)
5)B1BG7	11)	17)	23)
6)B1BH2	12)	18)	24)

B1BF9
First Sample in SDG

B1BH5
Last Sample in SDG

04/02/2004
First Sample Receipt Date

04/02/2004
Last Sample Receipt Date

Note: There are a maximum of 20 samples (excluding PE sample) in SDG. Attach TRs to this form in alphanumeric order(the order listed above on this form).

Signature _____ **Date** 4/03/04

03

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BF9

TB

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.002

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0731

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	UJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	UJ
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	10	UJ
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BF9

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.002

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0731

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BF9

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.002

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0731

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG3

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.003

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0732

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U J
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	10	U J
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG3

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.003

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0732

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BG3

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.003

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0732

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG4

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.004

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0735

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U J
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	10	U J
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

031

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG4

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.004

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0735

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	UJ
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BG4

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.004

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0735

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG5

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.005

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0736

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U J
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	10	U J
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG5

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.005

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0736

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	UJ
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BG5

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.005

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0736

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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042

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG7

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.006

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0737

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U J
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	10	U J
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

049

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG7

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.006

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0737

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BG7

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.006

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0737

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/02/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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051

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH2

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.007

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0738

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U J
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	10	U J
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

058

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH2

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.007

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0738

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BH2

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.007

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0738

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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060

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH3

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.008

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0739

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	UJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	UJ
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	10	UJ
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

067

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH3

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.008

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0739

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BH3

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.008

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0739

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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069

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH4

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.009

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0740

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U J
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	10	U J
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

076

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH4

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.009

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0740

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BH4

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.009

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0740

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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078

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH5

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.010

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0741

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U J
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	10	U J
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

085

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH5

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.010

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0741

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BH5

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BF9

Matrix: (soil/water) WATER Lab Sample ID: 4727.010

Sample wt/Vol: 5.0 (g/mL) ML Lab File ID: A0741

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. _____ Date Analyzed: 04/03/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 32715 **SDG No.:** B1BG0
LABORATORY: A4 **SITE:** Exxon Service Station #32558

DATA ASSESSMENT

The current SOP HW-6 (Revision 12) March 2001, USEPA Region II Data Validation SOP for Statement of Work OLMO 4.3. for evaluating organic data have been applied.

All data are valid and acceptable except those analytes rejected "R"(unusable). Due to the detection of QC problems, some analytes may have the "J" (estimated), "N"(presumptive evidence for the presence of the material, "U" (non-detect) or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: Habteab Ghebreyesus **Date:** May 5, 2004

Verified By: _____ **Date:** 5/6/2004

CLP DATA ASSESSMENT

B1BG0

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

No problems found for this qualification.

2. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

No problems found for this qualification.

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

No qualification based on MS/MSD data.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:

< 10x MB, > CRQL, value unchanged and qualified "U"-
Acetone, B1BG2, B1BG6, B1BG9, B1BH0

CLP DATA ASSESSMENT

< 10x MB, < CRQL, reported CRQL and qualified "U"
Methylene Chloride, B1BG0, B1BG0MS, B1BG1, B1BG2, B1BG8, B1BG9

B) Field or rinse blank contamination:

Not applicable.

C) Trip blank contamination for VOA aqueous samples:

Not applicable.

D) Storage Blank associated with VOA samples only

No contamination in storage blank.

E) Tics "R" rejected
None.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".

No problems found for this qualification.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 in both initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that

CLP DATA ASSESSMENT

compound will be rejected "R".
B)Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < 25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

DC-6 The following volatile samples are associated with an initial calibration percent relative standard deviation (%RSD) outside primary criteria. Hits are qualified "J" and non-detects are not flagged.

Dichlorodifluoromethane, Acetone, Methyl tert-Butyl Ether
B1BG0, B1BG0MS, B1BG0MSD, VBLK24

DC-8 The following volatile samples are associated with a continuing percent difference (%D) outside primary criteria. Hits are qualified "J" and non-detects are qualified "UJ".

Dichlorodifluoromethane
B1BG1, B1BG2, B1BG6, B1BG8, B1BG9, B1BH0, B1BH1, VBLK26, VHBLK01

Chloromethane
B1BG0, B1BG0MS, B1BG0MSD, B1BG1, B1BG2, B1BG6, B1BG8, B1BG9, B1BH0, B1BH1, VBLK24, VBLK26, VHBLK01

2-Butanone, 4-Methyl-2-pentanone, 2-Hexanone, Bromoform, 1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-chloropropane
B1BG0, B1BG0MS, B1BG0MSD, VBLK24

7. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction.

CLP DATA ASSESSMENT

No problems found for this qualification.

8. COMPOUND IDENTIFICATION:

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

Not applicable.

9. CONTRACT PROBLEMS NON-COMPLIANCE:

10. FIELD DOCUMENTATION:

11. OTHER PROBLEMS

12. This package contains re-extractions, re-analyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified not to be used.

YES NO N/A

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 32715 LABORATORY: A4

SITE NAME: Exxon Service Station #32558 SDG Number(s): B1BG0

1.0 Chain of Custody and Sampling Trip Reports

1.1 Are the Traffic Reports/Chain-of-Custody Records present for all samples? [✓] ___ ___

ACTION: If no, contact RSCC, or contact the TOPO to obtain replacement of missing or illegible copies from the lab.

1.2 Is the Sampling Trip Report present for all samples and all fractions? [✓] ___ ___

ACTION: If no, contact either RSCC or ask the TOPO to obtain this information from the prime contractor.

2.0 Data Completeness and Deliverables

2.1 Have any missing deliverables been received and added to the data package? ___ ✓

NOTE: The lab is required to submit data for only two analyses, for each fraction. (i.e., the original sample and one dilution, or the most concentrated dilution analyzed and one further dilution.)

ACTION: Contact the TOPO to obtain an explanation or resubmittal of any missing deliverables from the lab. If lab cannot provide them, note the effect on the review of the package in the Contract Problems/Non-compliance section of the Data Assessment.

2.2 Was CLASS CCS checklist included with package? [✓] ___ ___

	YES	NO	N/A
2.3 Are there any discrepancies between the Traffic Reports/Chain-of-Custody Records, Sampling Report and Sample Tags?		✓	

ACTION: If yes, contact the TOPO to obtain an explanation or resubmittal of any missing deliverables from the laboratory.

3.0 Cover Letter SDG Narrative

	YES	NO	N/A
3.1 Is the Narrative or Cover Letter Present?	✓		
3.2 Are case number, SDG number and contract number contained in the SDG Narrative or cover letter (see SOW, Exhibit B, section 2.6.1)? EPA sample numbers in the SDG, detailed documentation of any quality control, sample, shipment, and/or analytical problems encountered in processing the samples? Corrective action taken?	✓		
3.3 Does the narrative contain the following information:			
VOA: description of trap and columns used for sample analyses?	✓		
VOA: a NOTE stating whether Volatile low level soil samples prepared according to the modified SW-846 Method 5035? (p. B-9/VOA, sec 2.6.1)		✓	
VOA: any discrepancies between low level soil weights determined in the field and in the Laboratory? (p. B-10/VOA, sec. 2.6.1)		✓	
BNA: description of columns used for sample analyses?			✓
Pest: description of columns used for sample analyses?			✓

NOTE: As per section 6.23.3.1 SOW/p. D-11/Pest,

	YES	NO	N/A
Packed columns are not permitted.			
3.4 Does the narrative, VOA and BNA sections, contain a list of all TIC's identified as alkanes and their estimated concentrations?	[ ]	✓	
3.5 Is the temperature indicator bottle present in the cooler? If not, did the Laboratory document in the SDG Narrative the alternative technique used to determine the cooler temperature? (Exhibit A/ p. A-5 sec. 4.2.1.2.3.3)	[✓]		
3.6 Does the narrative contain a record of all cooler temperatures? If the temperature of a cooler was exceeded, > 10° C, the lab must list by fraction and sample number, all affected samples.	[✓]	NA 8/4 ✓	
3.7 Does the Narrative contain a list of sample reanalyses submitted? Did the Lab distinguish whether the reanalysis is billable, and if so why?	[ ]		✓
3.8 Does the narrative contain a list of the pH values determined for each water sample submitted for volatile analysis (SOW Exhibit B, section 2.6.1.2)?	[ ]	✓	
3.9 Does the Case Narrative contain the statement, "verbatim", as required in Section B of the SOW?	[✓]		

ACTION: If "No", to any question in this section, contact the TOPO to obtain all necessary resubmittals. If information is not available, document in the Data Assessment under Contract Problems/Non-Compliance section.

4.0 Data Validation Checklist

	YES	NO	N/A
4.1 Check the package for the following discrepancies:			
a. Is the package paginated in ascending order starting from the SDG narrative?	[✓]		

	YES	NO	N/A
b. Are all forms and copies legible?	✓		
c. Is each fraction assembled in the order set forth in the SOW?	✓		

The following checklist is divided into three parts. Part A is for any VOA analyses, Part B is for BNA's and Part C is Pesticide/PCB's.

Does this package contain:

VOA Data?	✓		
BNA Data?			✓
Pesticide/PCB data?			✓

ACTION: Complete corresponding parts of checklist.

YES NO N/A

PART A: VOA ANALYSES

1.0 Sample Conditions/Problems

1.1 Do the Traffic Reports/Chain-of-Custody Records, Sampling Report or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data? ___ ☑ ___

ACTION: If any sample analyzed as a soil, other than TCLP, contains 50% - 90% water, all data shall be flagged as estimated (J). If a soil sample other than TCLP contains more than 90% water, then qualify positive results "J", and non-detects "R".

ACTION: If samples were not iced or the ice was melted upon arrival at the laboratory and the cooler temperature was elevated (> 10° C), then flag all positive results with a "J" and all non-detects "UJ".

ACTION: If both VOA vials for a sample have air bubbles or the VOA vial analyzed had air bubbles, flag all positive results "J" and all non-detects "R".

ACTION: The smallest soil size permitted is 0.5g. If any soil sample is smaller than 0.5g, document in the Data Assessment under Contract Problems/Non-Compliance.

2.0 Holding Times

2.1 Have any VOA technical holding times, determined from date of collection to date of analysis, been exceeded? ___ ☑ ___

Technical Holding Times for AQUEOUS AND SOIL NON-ENCORE SAMPLES: If unpreserved, aqueous samples, maintained at 4° C for aromatic hydrocarbons analysis must be analyzed within 7 days of collection. If

YES NO N/A

preserved with HCl (pH < 2) and stored at 4° C, then aqueous samples must be analyzed within 14 days of collection. If uncertain about preservation, contact sampler to determine whether or not samples were preserved. The holding time for non-Encore soils is 10 days from date of collection.

ACTION: If technical holding times for aqueous samples and soil non-Encore samples are exceeded, flag all positive results as estimated "J" and sample quantitation limits as estimated "UJ", and document in the Data Assessment that holding times were exceeded. If analyses were done more than 14 days beyond holding time, either on the first analysis or upon re-analysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of additional storage on the sample results. At a minimum, all results must be qualified "J", but the reviewer may determine that non-detect data are unusable "R". If holding times are exceeded by more than 28 days, all non detect data are unusable "R".

NOTE: Contractual Holding Times: Analysis of water and Non-Encore soil samples must be completed within 10 days of Validated Time of Sample Receipt (VTSR). This requirement does not apply to Performance Evaluation (PE) samples.

Technical Holding Times for soils Encore samples:

i) If sample was preserved ≤ 2 days of VTSR:

1. and analyzed ≤ 14 days from DoC, NO action needed.
2. and analyzed > 14 days from DoC, qualify positive results "J" and non-detects "UJ".
3. and analyzed > 28 days from DoC, qualify positive results "J" and non-detects "R".

ii) If sample was NOT preserved, or preserved > 2 days of VTSR

1. and analyzed ≤ 7 days from DoC, No action needed.

YES NO N/A

2. and analyzed > 7 days from DoC, qualify AROMATIC analytes only, both positive and non-detects, as estimated "J".
3. and analyzed > 10 days from DoC, qualify ALL positive analytes "J" and ALL non-detects as "UJ".
4. and analyzed ≥ 20 days from DoC, qualify positive results "J" and non-detects "R".

Note: CONTRACT holding times for soil Encore samples are:

1. Samples must be preserved within two (2) days of VTSR and must be analyzed within ten (10) days of VTSR.

2. Samples NOT preserved within two (2) days of VTSR must be analyzed within two (2) days of VTSR.

ACTION: If contractual holding times are exceeded, document in the Data Assessment.

NOTE: The data reviewer must note in the Data Assessment <u>whether or not</u> technical and contractual holding times were met.

<u>Table of Holding Time Violations</u>

(See Chain-of-Custody Records)

Sample ID	Sample Matrix	Was Sample Preserved?	Date Sampled	Date Lab Received	Date Analyzed

	YES	NO	N/A

3.0 System Monitoring Compound (SMC) Recovery (Form II)

3.1 Are the VOA SMC Recovery Summaries (Form II) present for each of the following matrices:			
a. Low Water?	[ ]	___	✓
b. Low Soil?	[✓]	___	___
c. Med Soil?	[ ]	___	✓
3.2 Are all the VOA samples listed on the appropriate System Monitoring Compound Recovery Summary for each of the following matrices:			
a. Low Water?	[ ]	___	✓
b. Low Soil?	[✓]	___	___
c. Med Soil?	[ ]	___	✓

ACTION: Contact the TOPO to obtain an explanation or resubmittal of any missing deliverables from the laboratory. If missing deliverables are unavailable, document the effect in the Data Assessment.

3.3 Were outliers marked correctly with an asterisk?	[✓]	___	___

ACTION: Circle all outliers with red pencil.

3.4 Was one or more VOA system monitoring compound recovery outside of contract specifications for any sample or method blank?	___	[✓]	___
If yes, were samples re-analyzed?	[ ]	___	✓
Were method blanks re-analyzed?	[ ]	___	✓

ACTION: If recoveries are ≥ 10%, but 1 or more compounds fail to meet SOW specifications:

YES NO N/A

1. All positive results are qualified as estimated "J".

2. Flag all non-detects as estimated detection limits "UJ" where recovery is less than the lower acceptance limit.

3. If SMC recoveries are above allowable levels, qualify positive results "J" and do not qualify non-detects.

ACTION: If any system monitoring compound recovery is < 10%:

1. Flag all positive results as estimated "J".

2. Flag all non-detects as unusable "R".

Professional judgement should be used to qualify data that only have method blank SMC recoveries out of specification in both original and re-analyses. Check the internal standard areas.

NOTE: Contractual requirements state that if any SMC fails the acceptance criteria, the sample must be re-analyzed. If the affected sample was not re-analyzed, document in the Data Assessment under Contract Problems/Non-Compliance.

NOTE: The laboratory must submit the following data:

1. If SMC recoveries and internal standard responses meet the acceptance criteria in the re-analyzed sample, then the laboratory must submit only the re-analysis.

2. If an SMC recovery and/or internal standard response fails to meet the acceptance criteria upon re-analysis, then submit data from both analyses.

(Refer to section 11.4.3.2, page D-45/VOA of the

YES NO N/A

SOW for more information.)

3.5 Are there any transcription/calculation errors between raw data and Form II? AS PER CADRE AND CCS [ ] [✓] [ ]

ACTION: If large errors exist, contact the TOPO to obtain an explanation or resubmittal of corrected deliverables from the laboratory. Make any necessary corrections and note the effect in the Data Assessment.

4.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present? [✓] [ ] [ ]

4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:

a. Low Water? [ ] [ ] [✓]

b. Low Soil? [✓] [ ] [ ]

c. Med Soil? [ ] [ ] [✓]

ACTION: If any matrix spike data are missing, take the action specified in section 3.2 above.

ACTION: No action is taken based upon MS/MSD data alone. However, using informed professional judgement, the MS/MSD results may be used in conjunction with other QC criteria to determine the need for qualification of the data.

ACTION: Circle all outliers with red pencil.

5.0 Blanks (Form IV)

5.1 Is the Method Blank Summary (Form IV) present? [✓] [ ] [ ]

5.2 Frequency of Analysis: for the analysis of VOA TCL compounds, has a reagent/method blank been analyzed during every 12-hour time period on each

		YES	NO	N/A
	GC/MS system, before any samples, and for each matrix? (water, low soil or medium soil)	☑		
5.3	Has a VOA method blank been analyzed at least once every twelve hours for each matrix/concentration and GC/MS system used?	☑		
5.4	Was a VOA instrument blank analyzed after each sample/dilution which contained a target compound that exceeded the initial calibration range?	☑		
5.5	Was a VOA storage blank analyzed at the end of all samples for each SDG in a case?	☑		

ACTION: If any method/instrument blank data are missing, contact the TOPO to obtain any missing deliverables from the laboratory. If method blank data are not available, reject "R" all associated positive data. However, using professional judgement, the data reviewer may substitute field blank or trip blank data for missing method blank data.

If the instrument blank was not analyzed after a sample with high concentration of reported values, inspect the chromatogram of the sample analyzed immediately after this analysis for possible carryover. Use professional judgement to determine if any contamination occurred and qualify analyte(s) accordingly.

If storage blank data is missing, contact the TOPO to obtain any missing deliverables from the laboratory. If unavailable, note in the Contract Problems/Non-Compliance section of the Data Assessment.

Note: A storage blank shall be analyzed and reported as a water sample unless the SDG contains only soil samples. Then, the storage blank may be analyzed and reported as a soil sample. (p. D-49/VOA sec. 12.1.3.5)

YES NO N/A

5.6 The validator should verify that the correct identification scheme for the EPA Blank samples were used. See page B-30, section 3.3.7.3 of the SOW for further information.

Was the correct identification scheme used for all VOA blanks? [✓] ___ ___

ACTION: Contact the TOPO to obtain missing deliverables from the lab, or make the required corrections on the forms. Document in the Data Assessment under Contract Problems/Non-compliance if corrections were made by the validator.

5.7 Chromatography: review the blank raw data-chromatograms (RICs), quant. reports or data system printouts and spectra. Is the chromatographic performance (baseline stability) for each instrument acceptable for VOA's? [✓] ___ ___

ACTION: Use professional judgement to determine the effect on the data.

5.8 Are all detected hits for target compounds in method, instrument and storage blanks less than the CRQL for that analyte? [✓] ___ ___

Exception: Acetone and 2-butanone must be less than 5 times the CRQL, and methylene chloride and Cyclohexane must be less than 2.5 times its CRQL. (p. D-50/VOA sec. 12.1.4.6)

ACTION: If no, an explanation and laboratory's corrective actions must be addressed in the case narrative. If the narrative contains no explanation, then make a note in the Contract Problems/Non-Compliance section of the Data Assessment.

6.0 Contamination

NOTE: "Water blanks", "drill blanks", and "distilled water blanks" are validated like any other sample, and are not used to qualify data. Do not

YES NO N/A

confuse them with the other QC blanks discussed below.

6.1 Do any method/instrument/reagent/storage blanks have positive results (TCL and/or TIC) for VOA's? ✓ [ ] ___

NOTE: When applied as directed in the table below, the contaminant concentration in these blanks are multiplied by the sample dilution factor and corrected for %moisture when necessary.

NOTE: A contaminated instrument blank is not allowable under this SOW. The instrument blank must meet the technical acceptance criteria for blank analyses(sec. 12.1.4). See page D-48/VOA, section 12.1.2.4 for additional information. Document in the Data Assessment under Contract Problems/Non-Compliance if contaminated instrument blank was submitted.

6.2 Do any field/trip/rinse blanks have positive VOA results (TCL and/or TIC)? ___ [ ] ✓

ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)

NOTE: All field blank results associated with a particular group of samples (may exceed one per case) must be used to qualify data. Trip blanks are used to qualify only those samples with which they were shipped and are not required for non-aqueous matrices. Blanks may not be qualified because of contamination in another blank. Field Blanks & Trip Blanks must be qualified for system monitoring compound, instrument performance criteria, spectral or calibration, and Internal standard QC problems.

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks. If any blanks are grossly contaminated, all associated data should be

YES NO N/A

qualified as unusable "R".

NOTE: Analytes qualified "U" for blank contamination are till considered as "hits" when qualifying for calibration criteria.

ACTION: For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R".

For:	Flag sample result with a "U" when:	Report CRQL & qualify "U" when:	No qualification is needed when:
TCL COMPOUNDS			
Methylene Chloride Acetone Toluene 2-Butanone Cyclohexane	Sample conc. is > CRQL, but ≤ 10× blank value.	Sample conc. is < CRQL and ≤ 10× blank value.	Sample conc. is > CRQL and > 10× blank value.
Other Conta-minants	Sample conc. is > CRQL, but ≤ 5× blank value.	Sample conc. is < CRQL and ≤ 5× blank value.	Sample conc. is > CRQL and > 5× blank value.

6.3 Are there field/rinse/equipment blanks associated with every sample? [ ] ✓ ___

ACTION: For low level samples, note in the Data Assessment that there is no associated field/rinse/equipment blank. For samples with high concentrations of suspected blank contaminants, use professional judgement to qualify these values and make a note in the Data Assessment.

Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 GC/MS Instrument Performance Check (Form V)

	YES	NO	N/A
7.1 Are the GC/MS Instrument Performance Check Forms (Form V) present for Bromofluorobenzene (BFB)?	✓		
7.2 Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the BFB provided for each twelve hour shift?	✓		
7.3 Is the mass spectrum of BFB acquired according to sec. 9.2.4.1 D-23/VOA?	✓		

Note: Sec. 9.2.4.1 states that "the mass spectrum of BFB MUST be acquired in the following manner. Three scans (the peak apex scan and the scans immediately preceding and following the apex) are acquired and averaged. Background subtraction is required, and MUST be accomplished using a single scan no more than 20 scans prior to the elution of BFB. DO NOT background subtract part of the BFB peak." See Attachment 2 for BFB criteria.

Action: If not, reject "R" all samples associated with that particular BFB.

7.4 Has an instrument performance check been analyzed for every analytical sequence on each instrument?	✓		

ACTION: List date, time, instrument ID, and sample numbers for which associated GC/MS tuning data are unavailable.

DATE	TIME	INSTRUMENT	SAMPLE NUMBERS

ACTION: Notify the TOPO to obtain missing data, if possible. If the lab cannot provide the missing data, reject, "R", all data generated outside an acceptable twelve hour calibration interval.

	YES	NO	N/A
7.5 Have the ion abundances been normalized to m/z 95 as specified in Exhibit D, page D-56/VOA? AS PER CADRE AND CCS	✓		
NOTE: All ion abundance ratios must be normalized to m/z 95, the nominal base peak, even though the ion abundance of m/z 174 may be up to 120% that of m/z 95.			
ACTION: If mass assignment is in error, qualify all associated data as unusable "R".			
7.6 Have the ion abundance criteria been met for each instrument used? AS PER CADRE AND CCS	✓		
ACTION: List all data which do not meet ion abundance criteria (attach a separate sheet).			
ACTION: If ion abundance criteria are not met, the Region II TPO must be notified.			
7.7 Are there any transcription/calculation errors between mass lists and Form Vs? (Check at least two values, but if errors are found check more.) AS PER CADRE AND CCS		✓	
7.8 Is the number of significant figures for the reported relative abundances consistent with the number given for each ion in the ion abundance criteria column?	✓		
ACTION: If large errors exist, take action as specified in section 3.5 above.			
7.9 Are the spectra of the mass calibration compound acceptable?	✓		
ACTION: Use professional judgement to determine whether associated data should be accepted, qualified, or rejected.			

8.0 Target Compound List (TCL) Analytes (FORM I VOA)

8.1 Are the Organic Analysis Data Sheets (Form I VOA) present with required header information on each page, for each of the following:

	YES	NO	N/A
a. Samples and/or fractions as appropriate?	[✓]	___	___
b. Matrix spikes and matrix spike duplicates?	[✓]	___	___
c. Blanks?	[✓]	___	___

8.2 Are the VOA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (quant. reports) included in the sample package for each of the following:

a. Samples and/or fractions as appropriate?	[✓]	___	___
b. Matrix spikes and matrix spike duplicates (mass spectra not required)?	[✓]	___	___
c. Blanks?	[✓]	___	___

ACTION: If any data are missing, take action specified in 3.2 above.

8.3 Is chromatographic performance acceptable with respect to:

a. Baseline stability?	[✓]	___	___
b. Resolution?	[✓]	___	___
c. Peak shape?	[✓]	___	___
d. Full-scale graph (attenuation)?	[✓]	___	___
e. Other: _____?	[ ]	___	✓

ACTION: Use professional judgement to determine the acceptability of the data.

8.4 Are the lab-generated standard mass spectra of the identified VOA compounds present for each sample? AS PER CADRE AND CLS [✓] ___ ___

ACTION: If any mass spectra are missing, take action as specified in 3.2 above. If the lab does not

YES NO N/A

generate its own standard spectra, document in the Contract Problems/Non-compliance section of the Data Assessment.

8.5 Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration? AS PER CADRE AND CCS ☑ ___ ___

8.6 Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum? AS PER CADRE AND CCS. ☑ ___ ___

8.7 Do sample and standard relative ion intensities agree within ±20%? AS PER CADRE AND CCS. ☑ ___ ___

ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected "R", flagged "N" (presumptive evidence of the presence of the compound) or changed to not detected "U" at the calculated detection limit. In order to be positively identified, the data must comply with the criteria listed in 8.5, 8.6, and 8.7.

ACTION: When sample carry-over is suspected, use professional judgement determine if instrument cross-contamination has affected positive compound identifications.

Tentatively Identified Compounds (TIC)

9.1 Are all Tentatively Identified Compound Forms (Form I Part B) present; and do listed TIC's include scan number or retention time, estimated concentration and "JN" qualifier? ☑ ___ ___

9.2 Are the mass spectra for the TIC's and associated "best match" spectra included in the sample package for each of the following: AS PER CADRE AND CCS

a. Samples and/or fractions as appropriate? ☑ ___ ___

b. Blanks? ☑ ___ ___

	YES	NO	N/A
c. Are Alkanes listed in/or part of the Case Narrative?	[ ]	✓	

ACTION: If any TIC data are missing, take action specified in 3.2 above.

ACTION: Add "JN" qualifier to all chemically named TIC's, if missing.

9.3 Are any TCL compounds (from any fraction including all PCB congeners) listed as TIC compounds? (Example: 1,2- dimethylbenzene is xylene, a VOA TCL analyte, and should not be reported as a TIC.)		✓	

ACTION: Flag with "R" only TCL compound detected in another fraction. (Except blank contaminants)

9.4 Are any TIC's reported earlier than 30 sec before the first purgeable compound, or three (3) min. after the last purgeable compound listed in Exhibit C (Volatiles)?		✓	

ACTION: Flag with "R" any TIC compound reported. (p. D38-VOA, sec. 11.1.2.2)

9.5 Are all ions present in the reference mass spectrum with a relative intensity greater than 10% also present in the sample mass spectrum?	✓		
9.6 Do TIC and "best match" standard relative ion intensities agree within ±20%?	✓		

ACTION: Use professional judgement to determine the acceptability of TIC identifications. If it is determined an incorrect identification was made, change the identification to "unknown," or to some less specific identification as appropriate. (Example: "C3 substituted benzene.")

Also, when a compound is not found in any blank, but is detected in a sample and is a suspected artifact of a common laboratory

YES NO N/A

contaminant, the result should be qualified as unusable "R". (E.g., Common Lab Contaminants: CO_2 (M/E 44), Siloxanes (M/E 73) hexane, aldol condensation products, solvent preservatives, and related by-products.

9.7 Are TIC's with responses < 10% of the internal standard (as determined by inspection of the peak areas or height) reported? ___ [✓] ___

ACTION: If yes, cross out questionable TIC's.

10.0 Compound Quantitation and Reported Detection Limits

10.1 Are there any transcription/calculation errors in Form I results? (Check at least two positive values. Verify that the correct internal standards, quantitation ions, and RRF were used to calculate Form I results.) ___ [✓] ___

10.2 Are the CRQL's adjusted to reflect sample dilutions and, for soils, sample moisture? [✓] ___ ___

ACTION: If errors are large, take action as specified in section 3.2 above.

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQL's are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample). Replace concentrations that exceeded the calibration range in the original analysis by crossing out the "E" and its corresponding value on the original Form I and substituting the data from the diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form Is not to be used, including any in the data summary package.

11.0 Standards Data (GC/MS)

11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (quant. reports) present for each initial and continuing calibration? [✓] ___ ___

YES NO N/A

ACTION: If any calibration standard data are missing, take action specified in 3.2 above.

12.0 GC/MS Initial Calibration (Form VI)

12.1 Are the Initial Calibration Forms (Form VI) present and complete at concentrations of 10, 20, 50, 100, 200ng for separate calibrations of low water/med soils (unheated purge) and low soils (heated purge)? [✓] ___ ___

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Were all low level soil standards, blanks and samples analyzed by heated purge? [✓] ___ ___

ACTION: If low level soil samples were not heated during purge, qualify positive hits "J" (estimated) and non-detects "R".

12.3 Are the % relative standard deviation (%RSD) values for VOA's ≤ 30% over the concentration range of the calibration? [ ] [✓] ___

NOTE: Although 23 VOA compounds have a contractual minimum RRF and no maximum %RSD, the technical acceptance criteria are the same for all analytes.

ACTION: Circle all outliers with red pencil.

ACTION: If %RSD is > 30.0%, qualify associated positive results for that analyte "J" (estimated). Do not qualify non-detects. When %RSD is > 90%, flag all non-detects for that analyte "R" (unusable) and positive hits "J" .

NOTE: Analytes previously qualified "U" for blank contamination are still considered as "hits" when qualifying for initial calibration criteria.

12.4 Are any average RRFs < 0.05? ___ [✓] ___

YES NO N/A

ACTION: Circle all outliers with red pencil.

ACTION: If the average RRF is < 0.05, then qualify associated non-detects with an "R" and flag associated positive data as estimated "J".

NOTE: Contract Requirement: The SOW allows up to two of the required analytes to fail contractual %RSD or RRF criteria, provided the %RSD is ≤ 40% and RRF is ≥ 0.010. (See Table 5, page D-61/VOA and analytes marked with a "*" on Form VI for required analytes and contractual criteria.) Technical criteria, however, are the same for all analytes.

ACTION: If more than two analytes failed %RSD or RRF criteria, document in the Data Assessment under Contract Problems/Non-Compliance.

12.5 Are there any transcription/calculation errors in the reporting of average relative response factors (RRF) or %RSD? (Check at least 2 values, but if errors are found, check more.) AS PER CADRE AND CLS ___ ☑ ___

ACTION: Circle errors with red pencil.

ACTION: If errors are large, contact the TOPO to obtain an explanation/resubmittal from the lab, document in the Data Assessment under Contract Problems/Non-Compliance.

13.0 GC/MS Continuing Calibration (Form VII)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for separate calibration of low water/med soil and low soil samples? ☑ ___ ___

13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument? ☑ ___ ___

ACTION: If any forms are missing or no continuing calibration standard has been analyzed within twelve hours of every sample analysis, contact

YES NO N/A

the TOPO to request an explanation/resubmittal from the lab. If continuing calibration data are not available, flag all associated sample data as unusable "R".

ACTION: List below all sample(s) that were not analyzed within twelve hours of the previous continuing calibration.

_____

_____

_____

13.3 Do any volatile compounds have a percent difference (%D) between the initial and continuing RRF which exceeds the ±25% criteria? ✓ [ ]

NOTE: Although 23 VOA compounds have a contractual minimum RRF and no maximum %D, the technical acceptance criteria are the same for all analytes.

ACTION: Circle all outliers with red pencil.

ACTION: Qualify both positive results and non-detects for the outlier compound(s) as estimated. When %D is > 90%, qualify all non-detects for that analyte unusable (R) and positive results estimated (J).

13.4 Are any continuing calibration RRFs < 0.05? [ ] ✓

ACTION: Circle all outliers with red pencil.

ACTION: If the RRF is < 0.05, qualify the associated non-detects as unusable "R" and the associated positive values "J".

NOTE: Contract Requirement: The SOW allows up to two of the required analytes to fail contractual %D and RRF criteria, provided that the %D is ≤ 40% and the RRF is ≥ 0.010. (See Table 5 pg. D-61/VOA or

YES NO N/A

analytes marked with a "*" on Form VI for required analytes.) Technical criteria, however, are the same for all analytes.

ACTION: If more than two analytes failed %D and RRF, criteria document in the Data Assessment under contract Problems/Non-Compliance.

13.5 Are there any transcription/calculation errors in the reporting of RRF or %D between initial and continuing RRFs? (Check at least two values, but if errors are found, check more.) AS PER CADRE AND CCS REPORT. ___ [✓] ___

ACTION: Circle errors with red pencil.

ACTION: If errors are large, contact the TOPO to obtain an explanation/resubmittal from the lab, document in the Data Assessment under Contract Problems/Non-Compliance.

14.0 Internal Standard (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits (-50% to +100%) for each continuing calibration? AS PER CADRE AND CCS. [✓] ___ ___

If no, was the sample re-analyzed? [ ] ___ [✓]

ACTION: 1. Circle all outliers with red pencil.

2. List all the outliers below.

Sample #	Internal Std.	Area	Lower/Upper Limit
			/
			/
			/

(Attach additional sheets if necessary, or attach copies of Form VIIIs.)

YES NO N/A

ACTION: If any sample was not re-analyzed, document in the Data Assessment under Contract Problems/Non-Compliance.

ACTION: 1. If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results quantitated with this internal standard.

2. Do not qualify non-detects when associated IS area counts are > 100%.

3. If the IS area in the sample is below the "lower limit," < 50%, qualify all analytes associated with that IS estimated, "J". If the area counts are extremely low, < 25% of the area in the 12 hour standard, or if performance exhibits a major abrupt drop- off, flag all associated non-detects as unusable, "R", and positive hits estimated, "J".

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? As per CADDRE and CCS [✓] ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

NOTE: Contractual requirements state that if any internal standard fails the acceptance criteria, the sample must be re-analyzed. If the affected sample was not re-analyzed, document in the Data Assessment under Contract Problems/Non-Compliance.

15.0 Field Duplicates

15.1 Were any field duplicates submitted for VOA analysis? [ ] [✓] ___ ___

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

YES NO N/A

ACTION: Any gross variation between duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: 68W03027	Case #: 32715	SDG #: B1BG0

SDG NARRATIVE

SAMPLE RECEIPT & LOGIN

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

EPA SAMPLE #	LAB SAMPLE #	DATE /TIME RECEIVED	AIRBILL NO.	VOA	BNA	PEST	REMARKS
B1BG0	4728.002	04/02/04 10:30	840835652977	X			ENCORE, MS/MSD
B1BG1	4728.003	04/02/04 10:30	840835652977	X			ENCORE
B1BG2	4728.004	04/02/04 10:30	840835652977	X			ENCORE
B1BG6	4728.005	04/02/04 10:30	840835652977	X			ENCORE
B1BG8	4728.006	04/02/04 10:30	840835652977	X			ENCORE
B1BG9	4728.007	04/02/04 10:30	840835652977	X			ENCORE
B1BH0	4728.008	04/02/04 10:30	840835652977	X			ENCORE
B1BH1	4728.009	04/02/04 10:30	840835652977	X			ENCORE

The cooler temperature was 2.5°C.
No discrepancies or issues were noted during sample receipt and login.

VOLATILES

Samples were analyzed using instrument **C-5973**.

Instrument **C-5973** consisted of an Agilent 5973 GC/MS with a 25-meter long DB-624 (Agilent cat# 128-1324) column having a 0.2mm ID and 1.12µm film thickness, an OI Analytical Purge and Trap Model 4560 with an Archon autosampler. The trap used is a K trap (Supelco Cat # 24940-U; VOCARB 3000) having 10cm of Carbopack B, 6cm of Carboxen 1000, and 1cm of Carboxen 1001.

The following equations are used for calculation of sample results from raw instrument output data:

$$\text{Concentration } (\mu g/Kg) = \frac{(Ax)(Is)}{(Ais)(RRF)(Ws)(D)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured.
A_{is} = Area of the characteristic ion (EICP) for the specific internal standard.
I_s = Amount of internal standard added in nanograms (ng).
RRF = the relative response factor from the heated purge of the calibration standard.
W_s = Weigh tof sample added to the purge tube, in grams (g).

$$D = \frac{100 - \%moisture}{100}$$

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package and in the computer readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature:

Sumana Reddy / QC Coordinator
Signature and Title

04/19/04
Date of Signature

RECEIVED
APR 20 2004
HAZ. WASTE SUPPORT SEC.

Sample Delivery Group(SDG) Cover Sheet

SDG Number: B1BG0

Laboratory Name.: A4 SCIENTIFIC, INC. **Laboratory Code.:** A4

Contract No.: 68W03027 **Case No.:** 32715

Analysis Price: **SDG Turnaround:** 21 days

EPA Sample Numbers in SDG(Listed in Numerical Order)

1)B1BG0	7)B1BH0	13)	19)
2)B1BG1	8)B1BH1	14)	20)
3)B1BG2	9)	15)	21)
4)B1BG6	10)	16)	22)
5)B1BG8	11)	17)	23)
6)B1BG9	12)	18)	24)

B1BG0
First Sample in SDG

B1BH1
Last Sample in SDG

04/02/2004
First Sample Receipt Date

04/02/2004
Last Sample Receipt Date

Note: There are a maximum of 20 samples (excluding PE sample) in SDG. Attach TRs to this form in alphanumeric order(the order listed above on this form).

Signature _____ **Date** 4/03/04

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG0

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.002

Sample wt/Vol: 5.7 (g/mL) G Lab File ID: C3578

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 3 Date Analyzed: 04/05/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U J
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U
67-64-1	Acetone	13	J
75-15-0	Carbon Disulfide	10	U
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10 ~~B~~	~~JB~~ U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	3	J
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

015

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG0

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.002

Sample wt/Vol: 5.7 (g/mL) G Lab File ID: C3578

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 3 Date Analyzed: 04/05/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U J
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U J
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U J
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U J
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BG0

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.002

Sample wt/Vol: 5.7 (g/mL) G Lab File ID: C3578

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 3 Date Analyzed: 04/05/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
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29.				
30.				

017

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG1

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.003

Sample wt/Vol: 4.5 (g/mL) G Lab File ID: C3591

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 3 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U J
74-87-3	Chloromethane	7	J
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	11	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
79-20-9	Methyl Acetate	11	U
75-09-2	Methylene Chloride	11 ~~A~~ ~~UB~~ U	
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-Butyl Ether	11	U
75-34-3	1,1-Dichloroethane	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
78-93-3	2-Butanone	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
110-82-7	Cyclohexane	11	U
56-23-5	Carbon Tetrachloride	11	U
71-43-2	Benzene	11	U
107-06-2	1,2-Dichloroethane	11	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG1

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.003

Sample wt/Vol: 4.5 (g/mL) G Lab File ID: C3591

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 3 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	11	U
108-87-2	Methylcyclohexane	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
1330-20-7	Xylene (total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BG1

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.003

Sample wt/Vol: 4.5 (g/mL) G Lab File ID: C3591

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 3 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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028

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG2

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.004

Sample wt/Vol: 5.6 (g/mL) G Lab File ID: C3592

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 4 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO:	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U J
74-87-3	Chloromethane	10	U J
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U
67-64-1	Acetone	51	B U
75-15-0	Carbon Disulfide	10	U
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10 3	JB U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	15	
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	3	J
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

036

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG2

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.004

Sample wt/Vol: 5.6 (g/mL) G Lab File ID: C3592

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 4 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BG2

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.004

Sample wt/Vol: 5.6 (g/mL) G Lab File ID: C3592

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 4 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG6

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.005

Sample wt/Vol: 5.1 (g/mL) G Lab File ID: C3593

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 1 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U J
74-87-3	Chloromethane	3	J
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U
67-64-1	Acetone	38	B U
75-15-0	Carbon Disulfide	10	U
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	18	
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG6

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.005

Sample wt/Vol: 5.1 (g/mL) G Lab File ID: C3593

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 1 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BG6

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.005

Sample wt/Vol: 5.1 (g/mL) G Lab File ID: C3593

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 1 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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049

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG8

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.006

Sample wt/Vol: 5.5 (g/mL) G Lab File ID: C3594

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 21 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U J
74-87-3	Chloromethane	12	U J
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	12	U
67-64-1	Acetone	12 ~~9~~	~~JB~~ U
75-15-0	Carbon Disulfide	12	U
79-20-9	Methyl Acetate	12	U
75-09-2	Methylene Chloride	12 ~~3~~	~~JB~~ U
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-Butyl Ether	12	U
75-34-3	1,1-Dichloroethane	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
78-93-3	2-Butanone	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
110-82-7	Cyclohexane	12	U
56-23-5	Carbon Tetrachloride	12	U
71-43-2	Benzene	12	U
107-06-2	1,2-Dichloroethane	12	U

058

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG8

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.006

Sample wt/Vol: 5.5 (g/mL) G Lab File ID: C3594

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 21 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	12	U
108-87-2	Methylcyclohexane	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
1330-20-7	Xylene (total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BG8

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.006

Sample wt/Vol: 5.5 (g/mL) G Lab File ID: C3594

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 21 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG9

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.007

Sample wt/Vol: 4.1 (g/mL) G Lab File ID: C3595

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 13 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U J
74-87-3	Chloromethane	14	U J
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	14	U
67-64-1	Acetone	36	B U
75-15-0	Carbon Disulfide	170	
79-20-9	Methyl Acetate	14	U
75-09-2	Methylene Chloride	~~14~~	~~B~~ U
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-Butyl Ether	14	U
75-34-3	1,1-Dichloroethane	14	U
156-59-2	cis-1,2-Dichloroethene	14	U
78-93-3	2-Butanone	10	J
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
110-82-7	Cyclohexane	14	U
56-23-5	Carbon Tetrachloride	14	U
71-43-2	Benzene	14	U
107-06-2	1,2-Dichloroethane	14	U

068

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BG9

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.007

Sample wt/Vol: 4.1 (g/mL) G Lab File ID: C3595

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 13 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	14	U
108-87-2	Methylcyclohexane	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U
1330-20-7	Xylene (total)	14	U
100-42-5	Styrene	14	U
75-25-2	Bromoform	14	U
98-82-8	Isopropylbenzene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
95-50-1	1,2-Dichlorobenzene	14	U
96-12-8	1,2-Dibromo-3-chloropropane	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U

1F

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B1BG9

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.007

Sample wt/Vol: 4.1 (g/mL) G Lab File ID: C3595

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 13 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH0

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.008

Sample wt/Vol: 5.4 (g/mL) G Lab File ID: C3596

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 4 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U UJ
74-87-3	Chloromethane	10	U UJ
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U
67-64-1	Acetone	25	B U
75-15-0	Carbon Disulfide	3	J
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	8	J
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

079

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH0

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.008

Sample wt/Vol: 5.4 (g/mL) G Lab File ID: C3596

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 4 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BH0

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.008

Sample wt/Vol: 5.4 (g/mL) G Lab File ID: C3596

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 4 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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081

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH1

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.009

Sample wt/Vol: 5.0 (g/mL) G Lab File ID: C3597

Level: (low/med) LOW Date Received: 04/02/04

% Moisture: not dec. 2 Date Analyzed: 04/06/04

GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U J
74-87-3	Chloromethane	10	U J
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-Butyl Ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U

090

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1BH1

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.009

Sample wt/Vol: 5.0 (g/mL) G Lab File ID: C3597

Level: (low/med) LOW Date Received: 04/02/04

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GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylene (total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1BH1

Lab Name: A4 SCIENTIFIC, INC. Contract: 68W03027

Lab Code: A4 Case No.: 32715 SAS No.: _____ SDG No.: B1BG0

Matrix: (soil/water) SOIL Lab Sample ID: 4728.009

Sample wt/Vol: 5.0 (g/mL) G Lab File ID: C3597

Level: (low/med) LOW Date Received: 04/02/04

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GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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092

rev. 8/03 # WORK PLAN FOR SITE INVESTIGATION

SITE NAME: Exxon Service Station #32558

JOB NUMBER: T050MG0P **ACTIVITY CODE:** V68B

AKA: Branchburg Exxon

ADDRESS: 936 Route 202

MUNICIPALITY: Branchburg **COUNTY:** Somerset

EPA ID NUMBER: None

ACCESS GRANTED ? Not Applicable - Surface Water

SITE CONTACT(S): Not Applicable **PHONE:** NA

AERIAL PHOTOS REVIEWED ? NA

BACKGROUND INFORMATION:

Exxon Service Station #32558 has had discharges of waste oil directly to ground water. Although soils were removed, the waste oil seen floating on ground water was not remediated. Additionally, the service station had floor drains and drywells, which are commonly used as discharge systems in service stations. Finally, a septic system was used at the site which may have accepted solvent wastes.

Monitor wells installed at this facility have demonstrated that chlorinated solvents have impacted ground water. This is the conclusion of the Site Investigation based upon the documents already available. Additional monitoring in the deep zone is needed to better characterize the nature of the discharges currently and this is proposed for an Expanded Site Investigation.

However, the impact of the contaminated ground water on the adjacent North Branch Raritan River is warranted and has not been evaluated at all. This sampling plan is designed to detect any impact to the river from this site.

Ground water flow in the shallow zone (approximately 20 feet below grade) is known generally to be to the south or southeast. Ground water in the deeper zone (40 – 60 feet below grade) has not been characterized at this site, but is suspected to mirror other nearby sites which have also shown southerly flow which would take ground water from the site toward the Raritan River.

Because the precise flow direction is not known, this plan contains sample locations which cover a range of probable points of entry to the river (see Map 1).

PURPOSE OF WORKPLAN: To determine if contaminated ground water has impacted the Raritan River, North Branch.

AREA OF CONCERN	SAMPLE ID	AREA/VOLUME OF AOC	NUMBER OF SAMPLES	SAMPLE JUSTIFICATION
Whole Site	SW1 - SW7 7R SED1 - SED7 7R	2.5 acres	14 7R	Plan is designed to determine if upstream locations in Raritan River as statistically more or less contaminated than areas at or downstream of the Probable Point of Entry for ground water contamination from this site.

Will Geoprobe be utilized for sample collection? No

Will Field GC be utilized for field screening? No

Are any borings planned to be greater than 50 feet? NA

478

MONITORING WELLS Not Applicable

CONVERSION FACTORS (CF): 2"= .16 6"= 1.46
4"= .65 8"= 2.6

ACCESS TO KEYS?

MW#	DIAMETER	DEPTH TO WATER	DEPTH TO BOTTOM	WELL VOLUME (USE CF)	VOLUME TO PURGE (3x)	NEW LOCK # IF CHANGED	COMMENTS

POTABLE WELLS

OWNERS NAME	ADDRESS	OWNER NOTIFIED

AQUEOUS SAMPLE

SAMPLE TYPE	NUMBER OF SAMPLES	TYPE OF ANALYSIS
MONITORING WELL		
GROUND WATER		
SURFACE WATER	7	VOC
POTABLE WELL		
DUPLICATE	1	VOC
MS/MSD	1	VOC
TOTAL	9 18	VOC

NON-AQUEOUS SAMPLE

SAMPLE TYPE	NUMBER OF SAMPLES	TYPE OF ANALYSIS
SOIL		
SEDIMENT	7	VOC
DUPLICATE	1	VOC
MS/MSD	1	VOC
TOTAL	9 18	VOC

AQUEOUS BLANKS

SAMPLE TYPE	NUMBER OF SAMPLES	TYPE OF ANALYSIS
FIELD BLANK	0	
TRIP BLANK	1	VOC
AMBIENT BLANK	0	

LABORATORY PERFORMING ANALYSIS: EPA LAB

EPA	JENNIFER FERANDA	732-321-6687/906-6870
DYNACORP CLASS	HEATHER BAUER	703-264-9348
SEVERN TRENT LAB	KIRK YOUNG	802-655-1203
DOH	JOE WALLIN	292-7749
ECOLOGY & ENVIRONMENT	BARBARA KRAJEWSKI	716-685-8080
GHR	CHRIS GLACKEN	215-784-9500 x232
PMC	ANDREW HERSEY	610-862-5032
CLEAN EARTH	VILMA DECLET	609-567-8140, ext 324 609-685-6316 (cellular)

STAFF DESK PHONE AND RADIO CALL NUMBERS

STAFF MEMBER	DESK PHONE	PAGER NUMBER	RADIO CALL
DUDLEY	584-4285	800-914-6906	HSMA 17
FOWLER	588-7314	888-341-6188	HSMA 92
HOKE	584-4289	800-493-0442	
POGWIST	584-4230	888-992-0948	
ROZYCKI	584-4284	888-226-0226	
SODANO	584-4275	888-992-0948	HSMA 83
SORCE	584-4287	888-964-6380	HSMA 87
VAN VELDHUISEN	584-4282	888-992-1769	HSMA 96
VOGEL	584-4291	800-914-6711	HSMA 25
WARD	584-4277	800-914-6942	
MOBILE LAB	371-3980		
WAREHOUSE	448-8688		
LOWRY	584-4271	P 888-341-6191 C 609-306-7342	
CORCORY	633-1480		

DIRECTIONS TO SITE FROM HORIZON CENTER

Route 195 West to Route 295 North. 295 North to Route 31 North. Route 31 North to Route 202 North. The site is on Route 202 in Branchburg on the Southbound lane.

INJURIES WHILE ON THE JOB

For billing purposes the treating facility should be given the following information:

1. The injury/illness is occupationally related
2. The person requiring treatment is a NJDEP employee
3. Bill to: Horizon Casualty Services
   33 Washington Street
   Newark, New Jersey 07102
   800-985-7777

NOTE: DO NOT RELEASE ANY PERSONAL INSURANCE OR ANY OTHER PERSONAL INFORMATION TO THE TREATING FACILITY.

1. **EMERGENCY CARE**

a. Should emergency medical assistance/treatment be necessary make a reasonable effort to go to the Horizon Healthcare Network Services Treatment Facility selected, however if the emergency is life

threatening, then proceed directly to the nearest emergency hospital.

b. Report your injury to your supervisor

c. Your supervisor should contact the Employee Services Unit immediately.

d. A case number and compensation ID card will be issued to you.

NOTE: If the injury occurs after 5:00 pm and until 8:00 am call the DEP Environmental Hotline at 877-WARNDEP (877-927-6337).

2. **NON-EMERGENCY CARE**

a. Should non-emergency medical assistance/treatment be necessary go to the Horizon Healthcare Network Services Treatment Facility selected.

b. Report your injury to your supervisor

c. Your supervisor should contact the Employee Services Unit immediately

d. A case number and compensation ID card will be issued to you.

Employee Services Unit (Maria Diem) **609-984-3412**

Office of Site Safety and Health **609-984-9779**

WORK PLAN APPROVAL SIGNATURES		**DATE**
CASE COORDINATOR		12/11/03
SUPERVISOR	Frank Love	12/11/03
BUREAU CHIEF		12/11/03

Reporting Sample Shipment

Notify the authorized RSCC or CLASS personnel of all sample shipments on the day of shipment. This notification enables the CLASS contractor to track the shipment of samples from the field to the laboratory and ensure s timely laboratory receipt of samples. When calling the CLASS contractor, **(Heather Bauer 703-818-4220)** provide the following information:

Your name, phone number, and Region.

Case number of the project.

Exact number(s) of samples (not number of containers), matrix(ces)and concentration(s) of samples shipped.

Type of analysis required.

Laboratory(ies) to which samples were shipped.

Carrier name and air bill number(s) for the shipment.

Method of shipment (e.g., overnight, two day).

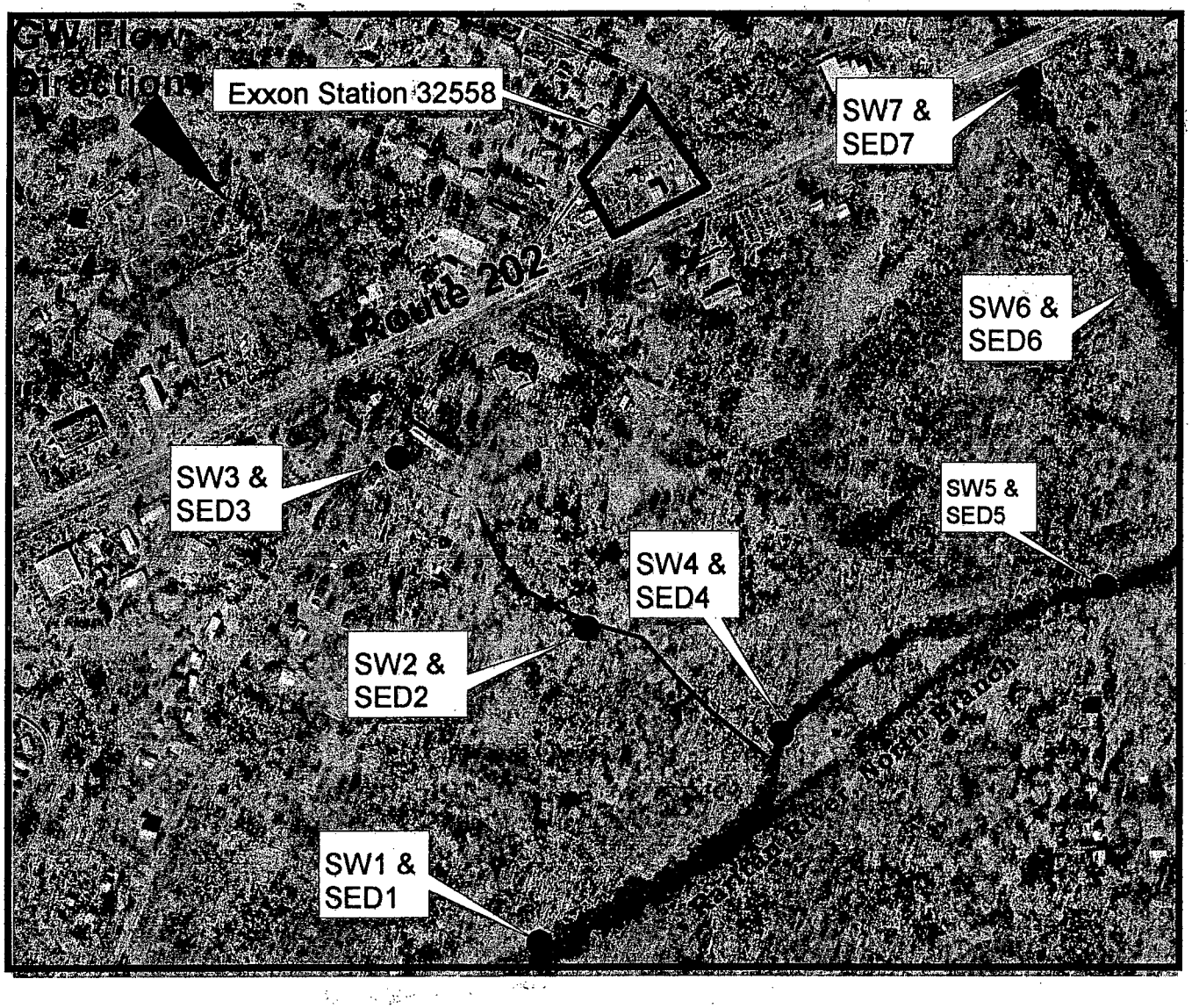
Date of shipment.

Suspected contaminants associated with the samples or site (e.g., dioxin, radio chemicals).

Information on completions, changes, delays, continuations, etc., pertinent to the Case and sampling project.

Sample shipments made after 5 p.m. EST should be scheduled with the CLASS contractor at the start of business the next day (8 a.m. EST). **You must notify the CLASS contractor by 3 p.m. EST Friday for sample shipments that will be delivered on Saturday.** If the CLASS contractor cannot notify the laboratory of a Saturday delivery, there may not be anyone present at the CLP laboratory to receive samples until Monday.

Map 1 - Surface Water & Sediment Sample Positions



NJDEP, December 2003

ATTACHMENT UU

State of New Jersey
Department of Environmental Protection
P. O. Box 434, Trenton, NJ 08625-0434

James E. McGreevey
Governor

Bradley M. Campbell
Commissioner

MAY 18 2004

John Hannig
Exxon/Mobil Corporation
1900 E Linden Ave Bldg 14, PO Box 730
Linden, NJ 07036

Re: Exxon Service Station #3-2558, Branchburg, Somerset County
Case Number: 99-02-04-1605-43
Block: 42 Lot(s):8

Dear Mr. Hannig:

The purpose of this letter is to provide you with written notification that the Department of Environmental Protection has reviewed the Memorandum of Agreement application for the above referenced site and determined that it is administratively complete. This letter constitutes the Memorandum of Agreement by rule pursuant to N.J.A.C. 7:26C-3.3. The date of this letter is considered the effective date of the Memorandum of Agreement.

The Memorandum of Agreement is a contract between the Department and you (or a duly authorized representative) and provides for departmental oversight of the investigation and/or cleanup of all or part of the contaminated property. The Memorandum of Agreement requires that you submit reports and documents related to cleanup activities to the Department for review, and that you reimburse the Department for the cost of the review. All cleanup activities must be conducted in accordance with the Department's "Technical Requirements for Site Remediation" (N.J.A.C. 7:26E et seq.).

All reports should be sent to:
New Jersey Department of Environmental Protection
Division of Remediation Support
Bureau of Environmental Measurement & Site Assessment
300 Horizon Center – P.O. Box 407
Trenton, NJ 08625-0407

Attention: Nick Sodano, Case Manager

Enclosed is a copy of the certification that must accompany all submittals to the Department.

Sincerely,

Ralph Dows for

Mark Pedersen, Chief
Bureau of Risk Management, Initial Notice and Case Assignment

C Somerset County Health Department
Enclosure

MEMORANDUM OF AGREEMENT FOR NON-RESIDENTIAL PROPERTIES

This Memorandum of Agreement (Agreement) has been developed so that any party interested in conducting a cleanup at a non-residential property can do so with oversight from the Department. The Department will provide oversight as long as the Department is reimbursed for the cost of its review. This Agreement must be completed in its entirety by the party interested in conducting the cleanup activities and/or the party's authorized agent, and shall include a fully executed copy of the attached certification. The Department can not process any applications unless all the information requested is complete and all questions are answered to the satisfaction of the Department. Once completed the Agreement must be submitted to the following address:

Division of Responsible Party Site Remediation
Bureau of Field Operations
401 East State Street, PO Box 434
Trenton, NJ 08625-0434

Attention: Section Chief - Case Assignment Section

(609) 292-2943

Answer all questions as completely as possible. If you have any questions when completing this form, it is recommended that you contact the Case Assignment Section at (609) 292-2943 between the hours of 8:00 AM and 5:00 PM for assistance.

This Agreement is entered into pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (hereinafter "the Department") by N.J.S.A. 13:1D-1 et seq. and N.J.S.A. 58:10B et seq. and the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq. and the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq. and duly delegated to the Section Chief, Division of Responsible Party Site Remediation, Bureau of Field Operations pursuant to N.J.S.A. 13:1B-4.

This Agreement is to be used as a formal request for Department oversight of cleanup activities pursuant to the Procedures for Department Oversight of the Remediation of Contaminated Sites (N.J.A.C. 7:26C et seq.)and review of reports submitted pursuant to the Technical Rules for Site Remediation (N.J.A.C. 7:26E et seq.).

MEMORANDUM OF AGREEMENT FOR NON-RESIDENTIAL PROPERTIES

CASE NUMBER 99-02-04-1605-43 DATE 04/15/04

A. Current Use: Agricultural ____ Industrial ____ Undeveloped ____

Commercial X Other ____

B. Site Name Exxon Service Station #3-2558

Street Address 936 Route 202 Southbound

Zip Code 08876

Municipality Branchburg County Somerset

Tax Block and Lot Number(s) Block 42 Lot 8

Latitude 40° 34' 7" N Longitude 74° 41' 0" W

Acreage 1.43 acres

APR 23 2004

Geographic Boundaries Route 202 (south) and River Road (west and northwest)

EPA ID # (if applicable) _____

C. **Who will be executing this Agreement?** (if different than Question B)

Name John Hannig, Project Manager

Affiliation ExxonMobil Corporation

Address 1900 East Linden Avenue, Building 14, P.O. Box 730

City Linden State New Jersey Zip Code 07036

State of Incorporation _____ Corp. Status _____

Telephone # 908-474-6637

D. Select which phase(s) of the cleanup process are to be performed and what document(s) are to be submitted pursuant to the Agreement being requested.

	REMEDIAL PHASE*		DOCUMENTS TO BE SUBMITTED
[ ]	Preliminary Assessment	[ ]	Preliminary Assessment Report
[ ]	Site Investigation	[ ]	Site Investigation Report
[X]	Remedial Investigation	[ ]	Remedial Investigation Workplan
[ ]	Remedial Action	[X]	Remedial Investigation Report
		[ ]	Remedial Action Selection Report
* see attached Scope of Work		[ ]	Remedial Action Workplan
		[ ]	Remedial Action Report
		[X]	Request for Site Closure

E. **Current Site Owner(s)**

Name(s) _____

Firm ExxonMobil Corporation Telephone # _____

Street Address 1900 East Linden Avenue, Building 14

Municipality Linden

State New Jersey Zip Code 07036

F. **Current Business Operator(s)**

Name(s) _____

Firm ExxonMobil Corporation

Telephone # _____ Street Address 1900 East Linden Avenue

Municipality Linden State New Jersey Zip Code 07036

G. **Current Business Owner(s)** (if different than question Part E. or F.)

Name(s)_____

Firm _____ Telephone # _____

Street Address _____

Municipality _____

State _____ Zip Code _____

H. Provide the information requested below on the previous owners of the site and the entities who operated at the site.

Name	Owner or Operator	From	To
E.D. Van DerVeer	Owner	Unknown	1951
Mary E. Beldon	Owner	1951	1954
Bryant W. Griffin	Owner	1954	1956
Logan B. Steele	Owner	1954	1956
Calloway Corporation	Owner	1956	1956
Ellis & Lillian Charlott	Owner	1956	1960
ExxonMobil Corporation (a.k.a. Esso Standard Oil Company, Humble Oil & Refining Company, and Exxon Corporation)	Owner	1960	Present

I. For those former Owner(s) and/or Operator(s)identified above (in paragraph H), give a brief discussion of all operations at the site, including but not limited to types of operations, materials used, waste generated, and waste disposal techniques.

The property was part of the Van DerVeer farm until 1951 but it is unknown if farming activities took place on this particular parcel. The operations at the site between 1951 and 1960 are unknown. From 1960 to present, the property operated as an active gasoline service station.

J. Are there currently or have there ever been any notices on the deed which constitute a Declaration of Environmental Restriction (DER) pursuant to N.J.A.C. 7:26E-1 et seq.?

Yes ____ No X Unknown ____

If yes, please state the name of the site as it was identified in the DER, the address, lot and block and EP ID number (if applicable) associated with the site.

_____

_____

_____

K. Are there currently, or have there ever been any hazardous substances as defined by N.J.A.C. 7:1E-1 et seq., used, treated, stored, disposed or discharged at the site (ie. fuel oil, gasoline)?

Yes X No _____

L. Are there currently, or have there ever been any hazardous wastes as defined by N.J.A.C. 7:26G-16 et seq., used, generated, treated, stored, disposed or discharged at the site?

Yes X No ____ Unknown _____

M. Are there currently, or have there ever been, any above or below ground storage tanks at the site?

Yes X No ____ Unknown ____

N. Did the discharge impact groundwater?

Yes _____ No X Unknown _____

O. What are the current operations at the site?

Retail gasoline service station.

P. What are the intended future uses of the site?

Continued operation as a retail gasoline service station.

Q. Describe briefly the major types of contaminants found at the site and what media they affect.

Unknown - to be determined through the proposed remedial Investigation as outlined on the attached Scope of Work.

R. Describe in detail how the contamination came to exist at the site. For example, were there past spills, landfill operations, industrial septic systems, USTs, deposition of fill material, etc.?

The NJDEP correspondence dated July 10, 2003 identified four Areas of Concern (AOCs) as potential sources of regional groundwater contamination .

1) A former septic system identified on a site plan provided by the NJDEP in July 2003 to the northeast of the station building.
2) An abandoned floor drain system in the service bays.
3) An area of "contaminated soil", believed to be an area where stockpiled soil had previously been stored.
4) An AOC surrounding a former waste oil UST.
5) Groundwater in the area of former monitoring well MW5 (all wells were abandoned in 2000).

S. List any civil/criminal actions taken against the owner/operator, managers or officials associated with the site for violations of any environmental laws or statutes.

Check here if no violations or alleged violation [X]

Date of action _____

Section of law or statute violated _____

Type of enforcement action _____

Description of the violation _____

_____

How was the violation or alleged violation resolved?

_____

_____

T. List all permits currently held by the applicant for the site. (NJPDES, RCRA, etc.)

UST Registration number 0086727

U. Has a Hazardous Discharge Site Remediation Fund Grant or Loan Application been filed with the Department?

Yes ____ No X

V. Has a loan/grant application pursuant to the Underground Storage Tank Finance Act been filed with the Department?

Yes ____ No X

W. Is the site located in a Neighborhood Empowerment Zone as defined in P.L.1996,c.62 (New Jersey Urban Redevelopment Act) ?

Yes ____ No X Unknown _____

X. Who will be the contact for all matters of this application?

Name John Hannig Title Project Manager

Affiliation ExxonMobil Corporation Phone 908-474-6637

Address 1900 East Linden Avenue, Building 14

City/Town Linden State NJ Zip Code 07036

Y. Is the site currently, or has it ever been, under the oversight of any other program within the Department of Environmental Protection?

Yes __X__ No ____

If Yes, explain: Bureau of Underground Storage Tanks until November 17, 1999 when a No Further Action letter was issued for case number 92-12-28-1431-33-18.

Z. Do you consider this site to be a Brownfield as defined below:

Any former or current commercial or industrial site that is currently vacant or underutilized and on which there has been, or there is suspected to have been, a discharge of a contaminant.

OR

Is the remediation being conducted with the intent to pursue redevelopment?

Yes ____ No __X__

The following certification shall be signed by the highest-ranking individual with overall legal responsibility for implementing the remediation of a site, but shall not include contractors or consultants.

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively, or;
3. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.

A duly authorized representative of those persons described above may also sign the certification. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above;
2. The authorization specifies either an individual or a position having a responsibility for the overall operation of the site or activity, such as the position of plant manager, or a superintendent or person of equivalent responsibility (a duly authorized representative may thus be either a named individual or an individual occupying a named position);
3. The written authorization is submitted to the Department; and
4. If the authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this subsection shall be submitted to the Department prior to or together with any reports, information or applications to be signed by an authorized representative.

" I certify that I am fully aware of the requirements of N.J.A.C 7:26C-3, specifically as it pertains to the memorandum of agreement by rule. Further, I agree to pay the Department's oversight costs for the Department's review of any submissions pursuant to the memorandum of agreement until such time as I notify the Department that it is no longer feasible or desirable for me to continue with the memorandum of agreement."

SIGNATORY

Date: 4/16/04 BY: _____

Signature

J.E. HANNIG

Print Full Name Signed Above

Date: 4/16/04 BY: Joann Ramos

Notary Signature

JOANN RAMOS
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Feb. 22, 2009

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Date: _____ BY: _____

Vincent S. Krisak, Section Chief
DRPSR, Case Assignment Section

The Department will review the application and will respond in writing, within thirty calendar days from receipt of the application, as to whether the application is administratively complete or not. If the application is incomplete the deficiencies shall be listed. If the application is complete, the applicant will be deemed to have entered into an Agreement by rule pursuant to N.J.A.C. 7:26C-3.3.

Exxon Service Station #3-2558
936 Route 202
Branchburg, Somerset County, New Jersey
Scope of Work

Groundwater and Environmental Services, Inc. (GES) has been contracted by ExxonMobil Refining and Supply Company (ExxonMobil) to conduct environmental assessment activities at Exxon Service Station #3-2558 located at 936 Route 202, Branchburg, Somerset County, New Jersey. This assessment is being conducted in cooperation with the New Jersey Department of Environmental Protection (NJDEP) to evaluate the possible presence of a trichloroethene (TCE) source on the site. The work plan outlined below has been prepared based on the scope of work outlined in the NJDEP's September 15, 2003 correspondence.

This scope of work (SOW) consists of the drilling of four borings to between 120 and 160 feet below ground surface (bgs), the installation of FLUTe® blank well liners in each of the boreholes, the completion of geophysics at each boring location, installation of multi-level water sampling systems, groundwater sampling from each of the screened intervals, and subsequent reporting.

Drilling: Prior to the start of drilling activities, Mr. Mike Miller of the NJDEP's Bureau of Water Allocation (BWA) will be contacted for approval to install open boreholes in the bedrock exceeding 25 feet.

Four borings, depicted as monitoring wells MW1D through MW4D on the Proposed Monitoring Well Location Map (Attachment A), will be drilled as six-inch in diameter open boreholes into bedrock utilizing the air rotary drilling method. Borings MW1D, MW2D, and MW4D will be drilled to approximately 120 feet bgs and boring MW3D will be drilled to approximately 160 feet bgs. Boring MW3D (to be completed approximately ten feet north of former monitoring well MW5) will be drilled last in order to minimize the time available for cross-contamination prior to liner installation.

Development: Subsequent to completion, each boring will be developed utilizing a submersible pump. A practical effort will be made to develop each borehole to clarity prior to geophysical logging. Development water will be pumped directly to a tank truck and disposed of properly off-site. Waste manifests for the disposal of the development water will be submitted to the NJDEP.

Geophysics: Following development, geophysical logging will be completed at each borehole prior to the installation of the well liner (detailed in the following section). The logging activities must be performed prior to the installation of the liner as the liner may prevent accurate logging of the borehole/borehole fluid characteristics. For example, caliper logging to determine the diameter of the borehole, fluid temperature and electrical conductance/resistivity logging to measure the physical properties of the water within the

borehole, and the identification of fractures where in-flow/out-flow of groundwater occurs via a Heat-Pulse flowmeter would be ineffective if performed after liner installation.

In addition to the techniques listed above, logging of the geophysical properties of the geological formation via gamma radiation and electrical conductance/resistivity and video logging of the borehole walls will be completed.

Caliper logging and logging of the physical properties of the geologic formation and fluid within the boreholes will provide results compatible with the Mount Sopris system. The optical televiewer, utilized to obtain structural data for characterizing the bedrock formation, will provide results compatible with the Robertson Geologging system. Following completion of the geophysical logging, results will be submitted to the NJDEP and will be in electronic format where possible.

Blank Liner Installation: Following completion of the geophysical logging activities, FLUTe® blank well liners will be installed in each borehole. The blank well liners will serve to temporarily seal the borehole and prevent cross-contamination prior to final well construction. The liners will be installed throughout the entire length of the boreholes and will be housed in a sub-grade vault.

A flush mount manhole will be utilized as the liner vault. As per the FLUTe® specifications, the vault diameter will be a minimum of six inches greater than the borehole casing, the casing will extend a minimum of four inches above the vault floor, and the clearance from the top of the casing to the underside of the manhole lid will be a minimum of eight inches.

Multi-Level Well Installation: Following analysis of the geophysical data, the final well construction specifications for each borehole will be determined and proposed multi-level monitoring system specifications will be submitted to the NJDEP. If ExxonMobil intends to utilize FLUTe® multi-port monitoring systems, Mr. Mike Miller of the NJDEP BWA will be contacted for approval. Once approved, the proposed multi-level monitoring systems will be installed in each borehole to monitor the water-bearing zones identified during the geophysical logging.

Groundwater Sampling: Following installation of the multi-level monitoring systems, groundwater samples will be collected from each of the monitored zones within boreholes MW1D through MW4D. The groundwater samples will be submitted for laboratory analysis for volatile organic compounds (VOCs), including methyl *tertiary*-butyl ether (MTBE) and *tertiary*-butyl alcohol (TBA), plus a library search via USEPA approved test method 624+10.

Upon receipt from the analytical laboratory, a copy of the groundwater analytical results package, including quality control information, will be submitted to the NJDEP. This

data will be submitted to the NJDEP as soon as it is available to ExxonMobil and prior to the submission of the *Site Investigation Report* (SIR). Included with the SIR submission will be a diskette with a HazSite compliant Electronic Data Submission.

Schedule: It is anticipated that the initial phase of field work (boring installation, borehole development, geophysical investigation, and blank well liner installation) will take eight to ten working days to complete. The first day will be used for vacuum-assisted hand-clearing of the boring locations. The following days will be spent driving steel casing and drilling the boreholes. Subsequent to completion of the borings, well development will be completed. Purge water from well development will be loaded into a tanker truck for off-site disposal. It is anticipated that drilling activities and borehole development will be completed in five to six working days. Once development has been deemed sufficient, down-hole geophysics will be conducted.

Geophysical analysis of each borehole will consist of measurements via three-arm caliper, fluid temperature, electrical resistivity/conductance, optical televiewer, high-resolution acoustic televiewer, and heat pulse flowmeter methods. It is anticipated that geophysical logging will be completed in one to two working days. Upon completion of the geophysical investigation, each boring will be sealed using a FLUTe® blank well liner to prevent cross-contamination. Liner installation will be completed in one to two working days.

It is anticipated that it will take two to four weeks to adequately analyze data collected from the geophysical investigation. Upon completion of analysis, well completion details (screen interval(s) and depth(s)) will be determined. At a minimum, a screened interval will exist somewhere between 41 and 61 feet bgs in MW3D to investigate a historic TCE groundwater sample result in that location. Once finalized, multi-level monitoring system construction details will be submitted to the NJDEP for review. Upon NJDEP approval, the selected multi-level well technology will be installed.

Following installation, a minimum of two weeks will be allowed for the multi-level monitoring systems to stabilize and equilibrate with the aquifer. Subsequently, groundwater samples from each screened interval of each borehole will be collected. Groundwater samples will be submitted for laboratory analysis for VOCs, including MTBE and TBA, plus a library search.

Once this SOW is approved by the NJDEP, it will be submitted as an attachment to a Memorandum of Agreement (MOA) application. If the MOA is accepted and approved by the NJDEP without any major changes by April 16, 2004, the following schedule is proposed:

Activity	***Proposed Date(s)***
Borehole hand-clearing	*5/10/04*
Borehole drilling	*5/11/04 - 5/17/04*
Borehole development	*5/18/04*
Geophysical investigation	*5/19/04 - 5/20/04*
FLUTe® blank well liner installation	*5/21/04*
Analysis of geophysical investigation	*5/24/04 - 6/28/04*
Submittal of well specifications to NJDEP	*7/2/04*
Multi-level monitoring system installation	*8/9/04 - 8/11/04*
Groundwater sampling	*8/26/04*
Submittal of analytical data to NJDEP	*9/14/04*
SIR submittal to NJDEP	*10/31/04*

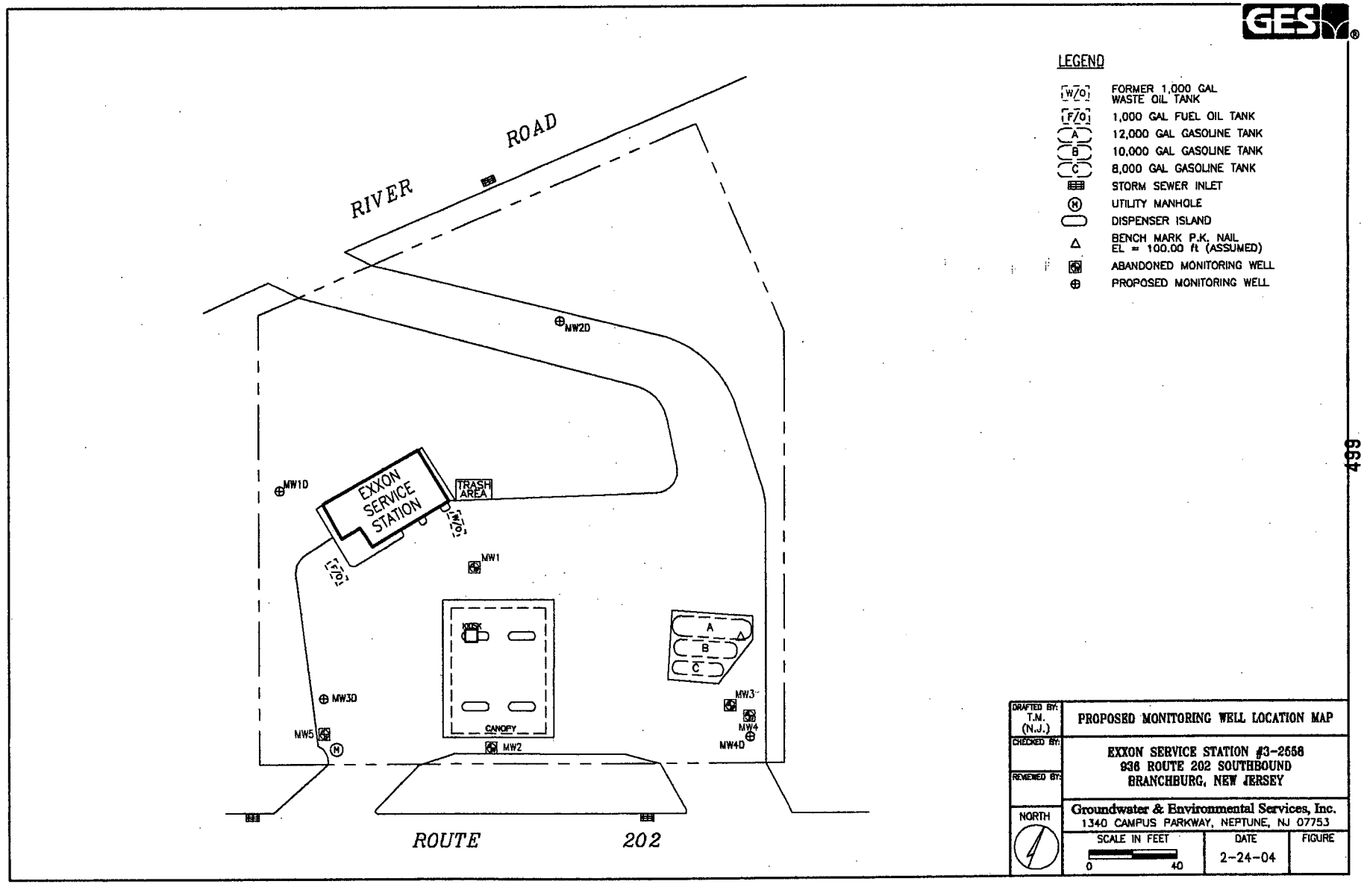
Reporting: A SIR will be submitted to the NJDEP following completion of the investigation. The SIR will detail the field activities outlined by this SOW, provide waste disposal/classification information for soil and groundwater generated during the investigation, and include a diskette with a HazSite compliant Electronic Data Submission. A tentative submittal date of September 30, 2004 is proposed at this time.

Assumptions: This SOW was prepared under the assumption that ExxonMobil will receive approval from the NJDEP's BWA to install open boreholes in bedrock that exceed the 25 foot limit established by N.J.A.C. 7:9D et. seq. and to utilize the FLUTe® blank well liners to temporarily seal the boreholes, and the FLUTe® multi-port monitoring systems to monitor and sample the selected zones. Should either of these items not be approved by the BWA, additional work will be required and schedule delays will be encountered.

In addition, please be advised that delays beyond the control of ExxonMobil and/or GES (i.e. weather, etc.) may be encountered which may cause changes to the schedule proposed herein.

ATTACHMENT A

Proposed Monitoring Well Location Map



ATTACHMENT VV

New Jersey Department of Environmental Protection
Division of Remediation Management and Response
Bureau of Ground Water Pollution Assessment

TO: Nick Sodano, Case Manager, EMSA
FROM: Sarah Kinsey, Geologist, BGWPA

MAY 21 2004

SITE: Exxon Service Station #3-2558
936 Rt. 202 Branchburg, Somerset County
Subject: FLUTe liner and multi-level sampler for bedrock monitor wells

Date: May 21, 2004

ExxonMobil Refining and Supply Company (ExxonMobil) submitted a Scope of Work (SOW) to NJDEP for a groundwater investigation to be conducted at the above referenced site. The SOW was incorporated into a Memorandum of Understanding (MOA), with an effective date of May 18, 2004.

A licensed NJ well driller, under the supervision of ExxonMobil's environmental contractor, Groundwater and Environmental Services Inc. (GES), will install four bedrock borings, designated MW1D, MW2D, MW3D, and MW4D, to depths ranging from 120 up to 160 feet below ground surface (b.g.s.). Borehole MW4D is located downdip[1] of MW3D[2] and shall be the deepest borehole. Boreholes will be six (6) inches in diameter and will be installed using the air rotary drilling method. NJDEP has required that ExxonMobil install no less than 20 feet but no more than 30 feet of casing in the upper portion of each borehole. If GES and/or the NJ licensed well driller determine additional casing is needed in boreholes, the contractor shall contact the NJDEP/SRP Case Manager, Nick Sodano to request prior approval. Geophysical logging of each borehole will be conducted following development of boreholes. Prior to logging and installation of the FLUTe liners, described below, the borehole must be properly developed to remove cuttings.

Following completion of logging, blank polyethylene liners will be installed in each borehole. The liner vendor is Flexible Liner Underground Technologies, Ltd., or FLUTe®. The liners shall be installed by a NJ licensed well driller. These liners will be used to temporarily seal the borehole to prevent potential cross-contamination prior to final well construction. Flush mount manholes will be utilized as the liner vault.

Geophysical data will be analyzed so that multi-level monitor well construction specifications can be determined for each borehole. If ExxonMobil determines that use of the FLUTe multi-level samplers is feasible, the proposed design for multi-level samplers shall be submitted to NJDEP's SRP Case Manager, Nick Sodano, and Mike Miller of NJDEP's Bureau of Water Allocation for review. Prior approval of the multi-level groundwater sampler design from NJDEP is required before these samplers can be installed. If used at this site, the multi-level samplers shall be installed by NJ licensed well driller. In the event that ExxonMobil and/or NJDEP determine that use of the multi-level samplers is not feasible, ExxonMobil shall provide a proposal to NJDEP's SRP Case Manager to complete the temporary boreholes as permanent monitor wells in accordance with N.J.A.C. 7:9D et seq. and to install additional bedrock monitor wells at each of the four borehole locations for depth discrete groundwater monitoring as appropriate for characterization of groundwater flow conditions and groundwater quality.

Purging and sampling of the multi-level samplers must be conducted in accordance with the manufacturer's specifications.

ExxonMobil is required to request approval for a deviation of the well construction standards of N.J.A.C. 7:9D et seq., as specified under 7:9D-2.8 (Deviation from construction standards) from NJDEP's Bureau of

[1] Dip of bedrock formation is based on regional geologic mapping provided by NJDEP-NJGS.

[2] MW3D will be installed at the location of former monitor well MW-5 where TCE was detected above GWQC.

Water Allocation. The wells to be installed at this site will be installed in accordance with all requirements for bedrock monitor wells, except that the open hole intervals will be approximately 100 up to 150 feet, the temporary use of single borehole blank FLUTe liners in each borehole, and, tentatively, the use of FLUTe's multi-level sampling liner.

If you have questions or comments concerning this memorandum or require additional information, please contact me at 2-3005 or via email.

c: Rob Lux, Section Chief, BGWPA

ATTACHMENT WW

NJDEP MOBILE ENVIRONMENTAL LABORATORY

FINAL REPORT

EXXON BRANCHBURG

SOIL CUTTING FROM MONITOR WELL

SAMPLE RECEIVED: 4 NOVEMBER 2004

REPORT ISSUED: 9 NOVEMBER 2004

JOBCODE: T050MG0P

ANALYZED BY

KENNETH GLASSER
MOBILE LABORATORY PROGRAM MANAGER

NJDEP MOBILE LABORATORY ANALYTICAL RESULTS REPORT

MODIFIED METHOD 524: Measurement Of Purgeable VOCS In Methanol Preserved Soil Samples By GC/MS

Site Name: Exxon Branchburg
Date Received: 11/4/04
Date Analyzed: 11/ 5/04 19:51

Field Sample Name: CUTTING (S)
Lab Data File Name: 11050420.D
Dried Sample Weight(gm): 12.0 Dilution 1: 1

#	Compound Name	Soil Concentration PPM	*	Ret Time Minutes	Quantitation Response	Quant m/z	Qual m/z	PPM MDL
1)	fluorobenzene	8.00	*ISTD	17.23	3.10E+06	96.00	69.95	-----
2)	dichlorodifluoromethane	ND				85.05	87.05	0.20
3)	chloromethane	ND				50.00	52.00	0.20
4)	vinyl chloride	ND				62.05	64.05	0.20
5)	bromomethane	ND				94.05	96.05	0.20
6)	chloroethane	ND				64.05	66.05	0.20
7)	trichlorofluoromethane	ND				100.95	102.95	0.20
8)	1,1 dichloroethene	ND				95.95	61.00	0.20
9)	methylene chloride	ND				83.95	49.00	0.20
10)	trans-1,2-dichloroethene	ND				95.95	61.00	0.20
11)	1,1 dichloroethane	ND				63.00	65.00	0.20
12)	2,2 dichloropropane	ND				77.00	96.95	0.20
13)	cis-1,2-dichloroethene	ND				95.95	97.95	0.20
14)	chloroform	ND				82.95	84.95	0.20
15)	bromochloromethane	ND				127.95	129.95	0.20
16)	1,1,1 trichloroethane	ND				96.95	99.00	0.20
17)	1,1 dichloropropene	ND				75.00	109.95	0.20
18)	carbon tetrachloride	ND				116.95	118.95	0.20
19)	benzene	ND				77.00	78.00	0.20
20)	1,2 dichloroethane	ND				62.00	98.05	0.20
21)	trichloroethene	ND				95.00	130.00	0.20
22)	1,2 dichloropropane	ND				63.00	76.00	0.20
23)	bromodichloromethane	ND				82.95	84.95	0.20
24)	dibromomethane	ND				93.00	95.00	0.20
25)	cis-1,3-dichloropropene	ND				75.00	109.95	0.20
26)	toluene	ND				92.00	91.00	0.20
27)	trans-1,3-dichloropropene	ND				75.00	109.95	0.20
28)	1,1,2 trichloroethane	ND				83.00	85.00	0.20
29)	1,3 dichloropropane	ND				76.00	78.00	0.20
30)	tetrachloroethene	ND				165.90	128.95	0.20
31)	dibromochloromethane	ND				129.00	127.00	0.20
32)	1,2 dibromoethane	ND				106.95	108.95	0.20
33)	ethylbenzene	ND				106.00	91.00	0.20
34)	chlorobenzene	ND				112.05	77.00	0.20
35)	1,1,1,2 tetrachloroethane	ND				130.95	132.95	0.20
36)	m,p-xylene	ND				106.15	91.05	0.20
37)	o-xylene	ND				106.15	91.15	0.20

#	Compound Name	Soil Concentration PPM	*	Ret Time Minutes	Quantitation Response	Quant m/z	Qual m/z	PPM MDL
38)	styrene	ND				104.05	78.10	0.20
39)	isopropylbenzene	ND				120.00	105.00	0.20
40)	bromoform	ND				172.90	174.90	0.20
41)	1,1,2,2 tetrachloroethane	ND				82.95	84.95	0.20
42)	4-bromofluorobenzene	7.06	*SMC	30.96	7.55E+05	95.00	173.95	-----
43)	1,2,3 trichloropropane	ND				110.00	112.00	0.20
44)	n-propylbenzene	ND				120.00	91.00	0.20
45)	bromobenzene	ND				155.95	157.95	0.20
46)	1,3,5 trimethylbenzene	ND				120.00	105.00	0.20
47)	2-chlorotoluene	ND				91.05	126.05	0.20
48)	4-chlorotoluene	ND				91.15	126.05	0.20
49)	tert-butylbenzene	ND				119.15	91.15	0.20
50)	1,2,4 trimethylbenzene	ND				120.00	105.00	0.20
51)	sec-butylbenzene	ND				134.00	105.00	0.20
52)	4-isopropyltoluene	ND				134.00	119.00	0.20
53)	1,3 dichlorobenzene	ND				145.95	147.95	0.20
54)	1,4 dichlorobenzene	ND				145.95	147.95	0.20
55)	n-butylbenzene	ND				134.00	91.00	0.20
56)	1,2-dichlorobenzene-d4	6.43	*SMC	36.53	5.49E+05	151.90	149.90	-----
57)	1,2 dichlorobenzene	ND				145.95	147.95	0.20
58)	1,2-dibromo-3-chloropropane	ND				75.00	154.95	2.50
59)	1,2,4 trichlorobenzene	ND				180.00	182.00	0.20
60)	hexachlorobutadiene	ND				224.90	226.90	0.20
61)	naphthalene	ND				128.05	0.00	0.20
62)	1,2,3 trichlorobenzene	ND				180.00	182.00	0.20
63)	MTBE	ND				73.1	57.05	1.50

GC/MS Operator C. Lakin

Mobile Laboratory Manager

* LEGEND:

"J" = <MDL. NOTE: THE MDL IS BASED ON 8.0 GM DRIED SAMPLE WT IN 25 MLS METHANOL.
"ND" = NOT DETECTED
"B" = DETECTED IN BOTH SAMPLE & METHANOL BLANK
"ISTD" = INTERNAL STANDARD
"SMC" = SYSTEM MONITORING COMPOUND

"E" = CONCENTRATION OF SPECIFIC COMPOUND EXCEEDED CALIBRATION RANGE UPPER LIMIT.
USE INDIVIDUAL RESULTS FROM DILUTED SAMPLES WHEN AVAILABLE.

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
MOBILE ENVIRONMENTAL LABORATORY
WINDSOR INDUSTRIAL PARK, BLDG. 12
WINDSOR, NJ 08561

SITE NAME: CUTTINGS
LOCATION: Exxon Branchburg

JOB #: T050MG0P
ANALYZED BY: Corey Lakin

SOIL SAMPLE LOG - DRY WEIGHT CALCULATION

507

CT	SERIAL NUMBER	SAMPLE ID	INIT WT G	FINAL WT G	NET G	PAN G	WET G	DRY G	% SOIL	SAMPLE WT.
1	N/A	CUTTINGS	44.3	57.2	12.9	1.5	17.9	16.8	93.3	12.0

SYSTEM PERFORMANCE REPORTS

CALIBRATION STANDARDS

METHOD BLANKS

NJDEP MOBILE LABORATORY ANALYTICAL RESULTS REPORT

LAB METHOD 524: Measurement Of Purgeable VOCS In Water By Capillary Column GC/MS

Site Name: Exxon Branchburg
Date Received: 11/4/04
Date Analyzed: 11/ 5/04 12:46
ID: HEWLETT-PACKARD,5970E,0,2.03.39

Field Sample Name: 524MTBE 30/60
Lab Data File Name: 11050414.D
Sample Matrix: Aqueous Dilution=1/ 1
GC Column: VOCOL 60m, .25mm ID, 1.5um film

#	Compound Name	Concentration PPB	*	Ret Time Minutes	Quantitation Response	Quant m/z	Qual m/z	MDL
1)	fluorobenzene	20.00	*ISTD	17.26	3.00E+06	96.00	69.95	0.4
2)	dichlorodifluoromethane	30.00		5.76	4.85E+05	85.05	87.05	0.4
3)	chloromethane	30.00		6.38	3.78E+05	50.00	52.00	0.4
4)	vinyl chloride	30.00		6.65	5.05E+05	62.05	64.05	0.4
5)	bromomethane	30.00		7.75	5.51E+05	94.05	96.05	0.4
6)	chloroethane	30.00		7.87	5.66E+05	64.05	66.05	0.4
7)	trichlorofluoromethane	30.00		8.43	1.84E+06	100.95	102.95	0.4
8)	1,1 dichloroethene	30.00		9.87	9.28E+05	95.95	61.00	0.4
9)	methylene chloride	30.00		10.99	7.43E+05	83.95	49.00	0.4
10)	trans-1,2-dichloroethene	30.00		11.64	1.19E+06	95.95	61.00	0.4
11)	1,1 dichloroethane	30.00		12.66	1.71E+06	63.00	65.00	0.4
12)	2,2 dichloropropane	30.00		14.00	1.69E+06	77.00	96.95	0.4
13)	cis-1,2-dichloroethene	30.00		14.17	1.08E+06	95.95	97.95	0.4
14)	chloroform	30.00		14.55	1.88E+06	82.95	84.95	0.4
15)	bromochloromethane	30.00		15.07	3.44E+05	127.95	129.95	0.4
16)	1,1,1 trichloroethane	30.00		15.58	1.99E+06	96.95	99.00	0.4
17)	1,1 dichloropropene	30.00		15.96	1.60E+06	75.00	109.95	0.4
18)	carbon tetrachloride	30.00		16.28	1.83E+06	116.95	118.95	0.4
19)	benzene	30.00		16.77	8.63E+05	77.00	78.00	0.4
20)	1,2 dichloroethane	30.00		16.70	7.39E+05	62.00	98.05	0.4
21)	trichloroethene	30.00		18.36	1.36E+06	95.00	130.00	0.4
22)	1,2 dichloropropane	30.00		18.89	6.51E+05	63.00	76.00	0.4
23)	bromodichloromethane	30.00		19.62	9.93E+05	82.95	84.95	0.4
24)	dibromomethane	30.00		19.86	2.91E+05	93.00	95.00	0.4
25)	cis-1,3-dichloropropene	30.00		21.12	9.12E+05	75.00	109.95	0.4
26)	toluene	30.00		22.13	2.62E+06	92.00	91.00	0.4
27)	trans-1,3-dichloropropene	30.00		22.64	5.96E+05	75.00	109.95	0.4
28)	1,1,2 trichloroethane	30.00		23.18	2.94E+05	83.00	85.00	0.4
29)	1,3 dichloropropane	30.00		23.99	5.98E+05	76.00	78.00	0.4
30)	tetrachloroethene	30.00		24.18	1.55E+06	165.90	128.95	0.4
31)	dibromochloromethane	30.00		24.98	5.50E+05	129.00	127.00	0.4
32)	1,2 dibromoethane	30.00		25.65	3.51E+05	106.95	108.95	0.4
33)	ethylbenzene	30.00		27.02	1.69E+06	106.00	91.00	0.4
34)	chlorobenzene	30.00		26.95	2.63E+06	112.05	77.00	0.4
35)	1,1,1,2 tetrachloroethane	30.00		27.04	8.21E+05	130.95	132.95	0.4
36)	m,p-xylene	60.00		27.26	4.08E+06	106.15	91.05	0.4
37)	o-xylene	30.00		28.79	1.81E+06	106.15	91.15	0.4

#	Compound Name	Concentration PPB	*	Ret Time Minutes	Quantitation Response	Quant m/z	Qual m/z	MDL	SMC %Recov
38)	styrene	30.00		28.93	2.60E+06	104.05	78.10	0.4	
39)	isopropylbenzene	30.00		29.97	1.58E+06	120.00	105.00	0.4	
40)	bromoform	30.00		30.32	2.52E+05	172.90	174.90	0.4	
41)	1,1,2,2 tetrachloroethane	30.00		30.66	2.65E+05	82.95	84.95	0.4	
42)	4-bromofluorobenzene	20.00	*SMC	30.97	8.27E+05	95.00	173.95	0.4	100.0
43)	1,2,3 trichloropropane	30.00		31.21	9.95E+04	110.00	112.00	2.0	
44)	n-propylbenzene	30.00		31.38	1.59E+06	120.00	91.00	0.4	
45)	bromobenzene	30.00		31.74	9.79E+05	155.95	157.95	0.4	
46)	1,3,5 trimethylbenzene	30.00		31.93	2.30E+06	120.00	105.00	0.4	
47)	2-chlorotoluene	30.00		32.13	3.69E+06	91.05	126.05	0.4	
48)	4-chlorotoluene	30.00		32.28	3.56E+06	91.15	126.05	0.4	
49)	tert-butylbenzene	30.00		33.21	4.23E+06	119.15	91.15	0.4	
50)	1,2,4 trimethylbenzene	30.00		33.37	1.89E+06	120.00	105.00	0.4	
51)	sec-butylbenzene	30.00		33.97	1.24E+06	134.00	105.00	0.4	
52)	4-isopropyltoluene	30.00		34.45	1.34E+06	134.00	119.00	0.4	
53)	1,3 dichlorobenzene	30.00		34.96	2.08E+06	145.95	147.95	0.4	
54)	1,4 dichlorobenzene	30.00		35.34	1.89E+06	145.95	147.95	0.4	
55)	n-butylbenzene	30.00		35.93	1.13E+06	134.00	91.00	0.4	
56)	1,2-dichlorobenzene-d4	20.00	*SMC	36.55	6.60E+05	151.90	149.90	0.4	100.0
57)	1,2 dichlorobenzene	30.00		36.63	1.49E+06	145.95	147.95	0.4	
58)	1,2-dibromo-3-chloropropane	30.00		38.74	3.71E+04	75.00	154.95	2.0	
59)	1,2,4 trichlorobenzene	30.00		40.92	8.30E+05	180.00	182.00	0.4	
60)	hexachlorobutadiene	30.00		41.21	7.53E+05	224.90	226.90	0.4	
61)	naphthalene	30.00		41.70	7.44E+05	128.05	0.00	1.0	
62)	1,2,3 trichlorobenzene	30.00		42.34	5.88E+05	180.00	182.00	1.0	
63)	MTBE	60.00		11.16	1.37E+06	73.10	57.05	2.0	

GC/MS Operator CLAKIN

Mobile Laboratory Manager

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"B" = DETECTED IN BOTH SAMPLE & TRIP BLANK
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"E" = CONCENTRATION OF SPECIFIC COMPOUND EXCEEDED CALIBRATION RANGE UPPER LIMIT.
USE INDIVIDUAL RESULTS FROM DILUTED SAMPLES WHEN AVAILABLE.

NJDEP MOBILE LABORATORY ANALYTICAL RESULTS REPORT

LAB METHOD 524: Measurement Of Purgeable VOCS In Water By Capillary Column GC/MS

Site Name: Exxon Branchburg
Date Received: 11/4/04
Date Analyzed: 11/ 5/04 14:45
ID: HEWLETT-PACKARD,5970E,0,2.03.39

Field Sample Name: MB
Lab Data File Name: 11050416.D
Sample Matrix: Aqueous Dilution=1/ 1
GC Column: VOCOL 60m, .25mm ID, 1.5um film

#	Compound Name	Concentration PPB	*	Ret Time Minutes	Quantitation Response	Quant m/z	Qual m/z	MDL
1)	fluorobenzene	20.00	*ISTD	17.26	3.04E+06	96.00	69.95	0.4
2)	dichlorodifluoromethane	ND				85.05	87.05	0.4
3)	chloromethane	ND				50.00	52.00	0.4
4)	vinyl chloride	ND				62.05	64.05	0.4
5)	bromomethane	ND				94.05	96.05	0.4
6)	chloroethane	ND				64.05	66.05	0.4
7)	trichlorofluoromethane	ND				100.95	102.95	0.4
8)	1,1 dichloroethene	ND				95.95	61.00	0.4
9)	methylene chloride	ND				83.95	49.00	0.4
10)	trans-1,2-dichloroethene	ND				95.95	61.00	0.4
11)	1,1 dichloroethane	ND				63.00	65.00	0.4
12)	2,2 dichloropropane	ND				77.00	96.95	0.4
13)	cis-1,2-dichloroethene	ND				95.95	97.95	0.4
14)	chloroform	ND				82.95	84.95	0.4
15)	bromochloromethane	ND				127.95	129.95	0.4
16)	1,1,1 trichloroethane	ND				96.95	99.00	0.4
17)	1,1 dichloropropene	ND				75.00	109.95	0.4
18)	carbon tetrachloride	ND				116.95	118.95	0.4
19)	benzene	ND				77.00	78.00	0.4
20)	1,2 dichloroethane	ND				62.00	98.05	0.4
21)	trichloroethene	ND				95.00	130.00	0.4
22)	1,2 dichloropropane	ND				63.00	76.00	0.4
23)	bromodichloromethane	ND				82.95	84.95	0.4
24)	dibromomethane	ND				93.00	95.00	0.4
25)	cis-1,3-dichloropropene	ND				75.00	109.95	0.4
26)	toluene	ND				92.00	91.00	0.4
27)	trans-1,3-dichloropropene	ND				75.00	109.95	0.4
28)	1,1,2 trichloroethane	ND				83.00	85.00	0.4
29)	1,3 dichloropropane	ND				76.00	78.00	0.4
30)	tetrachloroethene	ND				165.90	128.95	0.4
31)	dibromochloromethane	ND				129.00	127.00	0.4
32)	1,2 dibromoethane	ND				106.95	108.95	0.4
33)	ethylbenzene	ND				106.00	91.00	0.4
34)	chlorobenzene	ND				112.05	77.00	0.4
35)	1,1,1,2 tetrachloroethane	ND				130.95	132.95	0.4
36)	m,p-xylene	ND				106.15	91.05	0.4
37)	o-xylene	ND				106.15	91.15	0.4

#	Compound Name	Concentration PPB	*		Ret Time Minutes	Quantitation Response	Quant m/z	Qual m/z	MDL	SMC %Recov
38)	styrene	ND					104.05	78.10	0.4	
39)	isopropylbenzene	ND					120.00	105.00	0.4	
40)	bromoform	ND					172.90	174.90	0.4	
41)	1,1,2,2 tetrachloroethane	ND					82.95	84.95	0.4	
42)	4-bromofluorobenzene	16.63	*SMC		30.98	6.97E+05	95.00	173.95	0.4	83.1
43)	1,2,3 trichloropropane	ND					110.00	112.00	2.0	
44)	n-propylbenzene	ND					120.00	91.00	0.4	
45)	bromobenzene	ND					155.95	157.95	0.4	
46)	1,3,5 trimethylbenzene	ND					120.00	105.00	0.4	
47)	2-chlorotoluene	ND					91.05	126.05	0.4	
48)	4-chlorotoluene	ND					91.15	126.05	0.4	
49)	tert-butylbenzene	ND					119.15	91.15	0.4	
50)	1,2,4 trimethylbenzene	ND					120.00	105.00	0.4	
51)	sec-butylbenzene	ND					134.00	105.00	0.4	
52)	4-isopropyltoluene	ND					134.00	119.00	0.4	
53)	1,3 dichlorobenzene	ND					145.95	147.95	0.4	
54)	1,4 dichlorobenzene	ND					145.95	147.95	0.4	
55)	n-butylbenzene	ND					134.00	91.00	0.4	
56)	1,2-dichlorobenzene-d4	14.28	*SMC		36.55	4.78E+05	151.90	149.90	0.4	71.4
57)	1,2 dichlorobenzene	ND					145.95	147.95	0.4	
58)	1,2-dibromo-3-chloropropane	ND					75.00	154.95	2.0	
59)	1,2,4 trichlorobenzene	ND					180.00	182.00	0.4	
60)	hexachlorobutadiene	ND					224.90	226.90	0.4	
61)	naphthalene	ND					128.05	0.00	1.0	
62)	1,2,3 trichlorobenzene	ND					180.00	182.00	1.0	
63)	MTBE	ND					73.10	57.05	2.0	

GC/MS Operator CLAKIN

Mobile Laboratory Manager

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USE INDIVIDUAL RESULTS FROM DILUTED SAMPLES WHEN AVAILABLE.

11/4/04

CHAIN OF CUSTODY

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL MEASUREMENTS AND QUALITY ASSURANCE
ENVIRONMENTAL MEASUREMENTS AND SITE ASSESSMENT SECTION

SITE NAME	Exxon Branchburg	T050MG0P		
SAMPLE NUMBER	SAMPLE DATE	SAMPLE TIME	# OF BOTTLES	DESCRIPTION OF SAMPLE
CUTTINGS	10/20/04		1	Soil Cutting From Monitor Well

REQUESTED ANALYSIS	VOC

PERSON ASSUMING RESPONSIBILITY FOR SAMPLES	PHONE #	DATE

SAMPLE NUMBER	RELINQUISHED BY	RECEIVED BY	TIME	DATE	REASON FOR CHANGE
	M Leahy	11/03/04			

ATTACHMENT XX

rev. 8/03 # WORK PLAN FOR SITE INVESTIGATION

SITE NAME: Exxon Service Station #32558 **AKA:** Branchburg Exxon

JOB NUMBER: T050MG0P **ACTIVITY CODE:** V68B

ADDRESS: 936 Route 202

MUNICIPALITY: Branchburg **COUNTY:** Somerset

EPA ID NUMBER: NJD986607752

ACCESS GRANTED ? Yes
SITE CONTACT(S): Philip Chang **PHONE:** **(732) 919-0100 Ext. 173**
AERIAL PHOTOS REVIEWED ? NA

BACKGROUND INFORMATION:

Exxon Service Station #32558 has had discharges of waste oil directly to ground water. Although soils were removed, the waste oil seen floating on ground water was not remediated. Additionally, the service station had floor drains and drywells, which are commonly used as discharge systems in service stations. Finally, a septic system was used at the site which may have accepted solvent wastes.

Monitor wells previously installed (now sealed) at this facility have demonstrated that chlorinated solvents had impacted ground water. This is the conclusion of the Site Investigation based upon the documents already available. Additional monitoring in the deep zone is needed to better characterize the nature of the discharges currently and this is proposed for an Expanded Site Investigation.

Ground water flow in the shallow zone (approximately 20 feet below grade) is known generally to be to the south or southeast with a downward component. Ground water in the deeper zone (40 – 60 feet below grade) has not been characterized at this site, but is suspected to mirror other nearby sites which have also shown southerly flow.

Exxon installed 120 to 160 feet deep borings with FLUTe ported liners to define ground water flow and water quality at this site in shallow and deep zones. Exxon has scheduled sampling of the FLUTe lined wells for May 10, 2005 via Accutest. Since Accutest is not a USEPA CLP laboratory, a CLP lab must be engaged to provide CLP quality data for the scheduled sampling.

PURPOSE OF WORKPLAN: To split samples with Exxon at the four FLUTe lined wells to document ground water quality at multiple vertical intervals, to document ground water flow direction and to provide CLP quality data.

AREA OF CONCERN	SAMPLE ID	AREA/VOLUME OF AOC	NUMBER OF SAMPLES	SAMPLE JUSTIFICATION
Whole Site	MW1D through MW4D	Whole site	20	Monitor well locations and depths were designed to answer the question of whether a discharge to ground water occurred at the site. All wells have ported FLUTe liners which enable sampling of discrete depths within each well. See below for more detail on port intervals

516

Will Geoprobe be utilized for sample collection? No

Will Field GC be utilized for field screening? No

Are any borings planned to be greater than 50 feet? YES

MONITORING WELLS

MW#	STATIC WATER LEVEL OF PORTED INTERVAL	DEPTH RANGE OF PORT	NUMBER OF ELUTe PURGEs	COMMENTS
MW1D31		31-40	3	Samples to Mobile Lab only
MW1D60		60-70	3	Samples to Mobile Lab only
MW1D77		77-87	3	Samples to Mobile Lab only
MW1D100		100-109	3	Samples to Mobile Lab only
MW1D112		112-120	3	Samples to Mobile Lab only
MW2D45		45-55	3	Samples to Mobile Lab only
MW2D72		72-82	3	Samples to Mobile Lab only
MW2D90		90-100	3	Samples to Mobile Lab only
MW2D107		107-120	3	Samples to Mobile Lab only
MW3D35		35-46		Samples to Mobile Lab and EPA
MW3D50		50-55		Samples to Mobile Lab and EPA
MW3D62		62-72		Samples to Mobile Lab and EPA
MW3D75		75-85		Samples to Mobile Lab and EPA
MW3D105		105-115		Samples to Mobile Lab and EPA
MW4D39		39-47		Samples to Mobile Lab only
MW4D56		56-67		Samples to Mobile Lab only
MW4D85		85-95		Samples to Mobile Lab only
MW4D102		102-118		Samples to Mobile Lab only
MW4D130		130-140		Samples to Mobile Lab only
MW4D150		150-162		Samples to Mobile Lab only

POTABLE WELLS

OWNERS NAME	ADDRESS	OWNER NOTIFIED
N/A		

AQUEOUS SAMPLE

SAMPLE TYPE	NUMBER OF SAMPLES	TYPE OF ANALYSIS
MONITORING WELL	20	VOC
GROUND WATER		
SURFACE WATER		
POTABLE WELL		
DUPLICATE	1	VOC
MS/MSD	1	VOC
TOTAL	22	VOC

NON-AQUEOUS SAMPLE

SAMPLE TYPE	NUMBER OF SAMPLES	TYPE OF ANALYSIS
TOTAL	0	

AQUEOUS BLANKS

SAMPLE TYPE	NUMBER OF SAMPLES	TYPE OF ANALYSIS
FIELD BLANK	0	
TRIP BLANK	1	VOC
AMBIENT BLANK	0	

LABORATORY PERFORMING ANALYSIS: EPA LAB

EPA	JENNIFER FERANDA	732-321-6687/906-6870
DYNACORP CLASS	HEATHER BAUER	703-264-9348
SEVERN TRENT LAB	KIRK YOUNG	802-655-1203
DOH	JOE WALLIN	292-7749
ECOLOGY & ENVIRONMENT	BARBARA KRAJEWSKI	716-685-8080
GHR	CHRIS GLACKEN	215-784-9500 x232
PMC	ANDREW HERSEY	610-862-5032
CLEAN EARTH	VILMA DECLET	609-567-8140, ext 324 609-685-6316 (cellular)

STAFF DESK PHONE AND RADIO CALL NUMBERS

STAFF MEMBER	DESK PHONE	PAGER NUMBER	RADIO CALL
DUDLEY	584-4285	800-914-6906	HSMA 17
FOWLER	588-7314	888-341-6188	HSMA 92
HOKE	584-4289	800-493-0442	
POGWIST	584-4230	888-992-0948	
ROZYCKI	584-4284	888-226-0226	
SODANO	584-4275	888-992-0948	HSMA 83
SORCE	584-4287	888-964-6380	HSMA 87
VAN VELDHUISEN	584-4282	888-992-1769	HSMA 96
VOGEL	584-4291	800-914-6711	HSMA 25
WARD	584-4277	800-914-6942	
MOBILE LAB	371-3980		
WAREHOUSE	448-8688		
LOWRY	584-4271	P 888-341-6191 C 609-306-7342	
CORCORY	633-1480		

DIRECTIONS TO SITE FROM HORIZON CENTER

Route 195 West to Route 295 North. 295 North to Route 31 North. Route 31 North to Route 202 North. The site is on Route 202 in Branchburg on the Southbound lane.

INJURIES WHILE ON THE JOB

For billing purposes the treating facility should be given the following information:

1. The injury/illness is occupationally related
2. The person requiring treatment is a NJDEP employee
3. Bill to: Horizon Casualty Services
   33 Washington Street
   Newark, New Jersey 07102
   800-985-7777

NOTE: DO NOT RELEASE ANY PERSONAL INSURANCE OR ANY OTHER PERSONAL INFORMATION TO THE TREATING FACILITY.

1. **EMERGENCY CARE**

a. Should emergency medical assistance/treatment be necessary make a reasonable effort to go to the Horizon Healthcare Network Services Treatment Facility selected, however if the emergency is life threatening, then proceed directly to the nearest emergency hospital.

b. Report your injury to your supervisor

c. Your supervisor should contact the Employee Services Unit immediately.

d. A case number and compensation ID card will be issued to you.

NOTE: If the injury occurs after 5:00 pm and until 8:00 am call the DEP Environmental Hotline at 877-WARNDEP (877-927-6337).

2. **NON-EMERGENCY CARE**

a. Should non-emergency medical assistance/treatment be necessary go to the Horizon Healthcare Network Services Treatment Facility selected.

b. Report your injury to your supervisor

c. Your supervisor should contact the Employee Services Unit immediately

d. A case number and compensation ID card will be issued to you.

Employee Services Unit (Maria Diem) 609-984-3412

Office of Site Safety and Health 609-984-9779

WORK PLAN APPROVAL SIGNATURES		**DATE**
CASE COORDINATOR	Nick Sodaro	5/2/05
SUPERVISOR	Frank Love	5/5/05
BUREAU CHIEF	[signature]	5/9/05

Reporting Sample Shipment

Notify the authorized RSCC or CLASS personnel of all sample shipments on the day of shipment. This notification enables the CLASS contractor to track the shipment of samples from the field to the laboratory and ensure s timely laboratory receipt of samples. When calling the CLASS contractor, **(Heather Bauer 703-818-4220)** provide the following information:

Your name, phone number, and Region.

Case number of the project.

Exact number(s) of samples (not number of containers), matrix(ces)and concentration(s) of samples shipped.

Type of analysis required.

Laboratory(ies) to which samples were shipped.

Carrier name and air bill number(s) for the shipment.

Method of shipment (e.g., overnight, two day).

Date of shipment.

Suspected contaminants associated with the samples or site (e.g., dioxin, radio chemicals).

Information on completions, changes, delays, continuations, etc., pertinent to the Case and sampling project.

Sample shipments made after 5 p.m. EST should be scheduled with the CLASS contractor at the start of business the next day (8 a.m. EST). **You must notify the CLASS contractor by 3 p.m. EST Friday for sample shipments that will be delivered on Saturday.** If the CLASS contractor cannot notify the laboratory of a Saturday delivery, there may not be anyone present at the CLP laboratory to receive samples until Monday.

Exxon Service Station #32558
Branchburg, New Jersey
May 10, 2005 Monitor Well Sampling